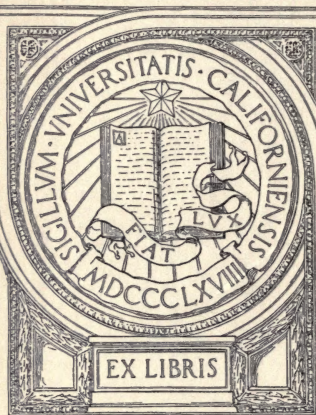
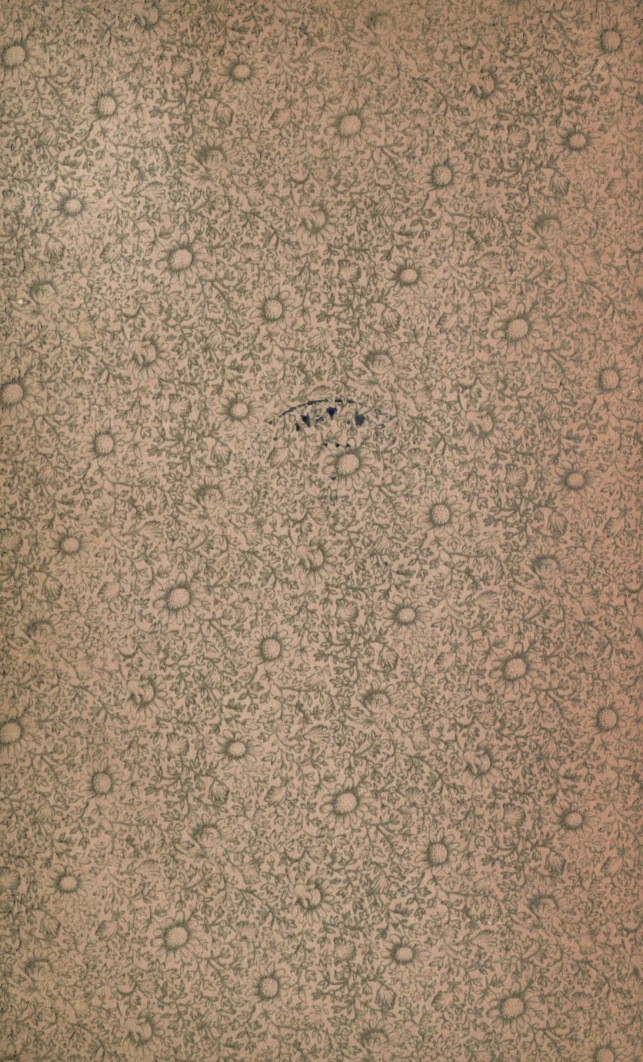


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AMERICAN HORTICULTURAL MANUAL.

PART II. SYSTEMATIC POMOLOGY.

CONTAINING DESCRIPTIONS OF THE LEADING VARIETIES
OF THE ORCHARD FRUITS, GRAPES, SMALL FRUITS,
SUBTROPICAL FRUITS, AND THE NUTS OF
THE UNITED STATES AND CANADA.

BY

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Commercial Fruits and Nuts.

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PREFACE.

THE word Pomology is practically synonymous with fruit-growing in its broad sense as given in Part I. But Systematic Pomology, as now used, is confined to the classification and description of fruits, and by usage it also includes the nuts.

In the past hundreds of varieties have been described which are not at this time known to our nursery lists or to those recommended by the widely distributed State and District Horticultural Societies. Charles Downing said in 1869: "If it were only necessary for me to present for the acceptance of my readers a choice garland of fruits comprising the few sorts that I esteem of the most priceless value, the space and time occupied would be very brief."

In our day the District, State, and National Horticultural Societies, together with growers and propagators, have been sifting the old lists and now present for about every section and horticultural district "the few sorts of most priceless value." Hence the plan of this work is to include only the varieties recommended at this time by societies and growers, including those of special value locally—so far as known—and those on the trial lists of the horticulturists of the Northwest and of the northern limits of successful fruit-growing.

For the benefit of amateurs and beginners the relative hardiness of varieties will be given with their adaptation—so far as known—to given soils, exposures, and altitudes. The names of fruits will be made to conform mainly to the code of the American Horticultural Society, but the popular name and the synonyms will follow.

Fruit lists and the classification and description of varieties are used principally for reference in time of need in selecting varieties for planting, and for determining the correctness of their names when

they come into bearing. The identification of unknown varieties is not so easy, as varieties differing widely in value are often similar in form, shape, and color.

Prof. N. E. Hansen is the author of the pages devoted to the apple, for which he was specially fitted, as for a number of years he has made a study of this orchard fruit in the United States, Europe, and Asia. He has also assisted in proof-reading and in other ways.

The descriptions of the pear and other fruits and nuts by the writer, where not original, have been made as accurate as possible by comparing those from all available sources with the descriptions of such careful pomologists as Downing, Thomas, Warder, Hogg, Lyon, Woolverton, Card, Wickson, and the Pomologist of the U. S. Department of Agriculture.

All the plates or fruit outlines not redrawn for the engraver by Miss Charlotte M. King, Artist of the Iowa Experiment Station, have been copied by permission from various sources, but mainly from Downing, Prof. S. A. Beach of the Experiment Station at Geneva, New York, Mr. L. Woolverton's *Fruits of Ontario, Canada*, Prof. R. H. Price of Virginia, Mr. T. V. Munson of Texas, Prof. F. W. Card of Rhode Island, and the Pomologist of the U. S. Department of Agriculture.

It will be noted that the arrangement is not alphabetical as in Downing and Thomas. The more natural method of grouping the orchard fruits, the small fruits, subtropical fruits, etc., has been adopted.

For reasons given in the Preface of Part I the usual principles and practices of horticulture have been included in a separate volume of convenient size with copious table of contents and index for easy reference to the numbered sections, which are often referred to in this volume.

J. L. BUDD.

AMES, IOWA, May 27, 1903.

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SYSTEMATIC POMOLOGY.

THE APPLE.

PRELIMINARY NOTES.

A WARM friendship existed for many years between Charles Downing and J. L. Budd. By the terms of Mr. Downing's will in 1885 his extensive library of pomological books and original manuscripts was bequeathed to the Horticultural Department of the Iowa Agricultural College, of which Professor Budd was the active head for nearly a quarter of a century. Since the days of the talented brothers, Andrew and Charles Downing, American pomology has far outgrown the capacity of any one man, and the contemplated revision of "Fruits and Fruit Trees of America," that monumental and encyclopedic work of the Downings, will probably never be undertaken, at least as a private enterprise. It is an age of specialties and of manuals devoted to one or two fruits only. However, there appears to be a legitimate field for a manual of moderate dimensions, adapted to the needs of the amateur, fruit-grower, and those desiring to make a beginning in the systematic study of fruits. The publishers of Downing's works wish to supply this demand. Hence this book.

Professor Budd, my teacher and friend, has asked me to prepare the chapter on apples. An effort has been made to include all the varieties in the recommended list of the American Pomological Society, together with some of the newer sorts, especially those of special value in the colder regions of the prairie Northwest. Northwestern pomology is as yet in a transition stage, due to the necessity of securing varieties hardier than those commonly grown in the Eastern and Southern States. The historical and introductory notes are largely

from Downing. New descriptions have been made whenever possible; where fresh material was not obtainable, all the available literature of the subject has been consulted. About forty of the eastern and southern sorts are entirely from Downing, slightly rearranged for the sake of uniformity. All the plates showing no core are from Downing; those with core outlines, stamens, and calyx-tube were redrawn for the engraver by Miss C. M. King, Artist of the Iowa Experiment Station, from indelible-pencil impressions taken direct from the apples by the writer.

The courtesy of G. B. Brackett, Pomologist of the United States Department of Agriculture, in furnishing descriptions of new and rare varieties is gratefully acknowledged.

N. E. HANSEN.

BROOKINGS, S. D., Jan. 16, 1903.

THE CLASSIFICATION OF APPLES.

BOTANICAL VERSUS POMOLOGICAL SYSTEMS.

THE characteristics of the tree, especially the habit of growth and color of young shoots, are often of great service in distinguishing between varieties that are much alike in fruit. Usually, however, in identifying varieties such characteristics are not obtainable, and all systems of classification dependent upon characteristics of the blossoms, leaves, young shoots, or habit of tree have proven impracticable in case of the apple and pear. Whenever known such points should be recorded. In case of cherries, peaches, plums, and grapes such systems are of service, because the fruit ripens while the plant is in full leaf. Advocates of these so-called botanical systems regard the fruit only as part of the tree, the same as the egg as a product of a bird; hence any variety should be described by the tree as well as by the fruit, all other methods appearing to them as superficial and unscientific.

The advocates of the pure pomological systems consider the fruit itself as something independent, and confine themselves to exact and minute descriptions of the fruit only, much as an oologist would attempt a description of, or key to, all sorts of bird eggs, without knowing beforehand the name of the mother bird. And in most cases the pomologist must determine the name of a variety of apple without any information as to character of tree.

In the following pages a brief sketch of the leading pomological systems of classifying apples is presented, without attempting to include every system known to pomological history.

THE TWO EARLIEST SYSTEMS.

1668. The earliest attempt at classifying apples is probably that of Johann Jonston, in Würtemberg, Germany, in 1668. The system is of value only in showing that a large number of varieties was then in cultivation.

1780. Manger, in Potsdam, Germany, divides apples into eight classes according to form: round, elliptical, ovate, cylindrical, flat, hyperbolic, parabolic, irregular. These were condensed into three classes:

- | | |
|--------------------|----------------------------------|
| | <i>a.</i> Regular. |
| | <i>b.</i> Plaited at eye. |
| | <i>c.</i> Plaited and ribbed. |
| I. A. Flat. | <i>a.</i> Regular. |
| | <i>b.</i> Plaited at eye. |
| | <i>c.</i> Plaited and ribbed. |
| II. B. Hyperbolic. | <i>a.</i> Regular. |
| | <i>b.</i> Plaited at eye. |
| | <i>c.</i> Plaited and ribbed. |
| III. C. Parabolic | <i>a.</i> Regular. |
| | <i>b.</i> Angular, etc., at eye. |
| | <i>c.</i> Ribbed. |

There are good points in this classification which should not have been overlooked.

THE FIRST NATURAL SYSTEM.

In 1792 Dr. Diel, of Germany, published a classification of apples based on natural affinities and resemblances, and the merits of this system were soon generally recognized and the system adopted. It was subsequently modified and extended by various writers, but may still be considered the basis of all the natural systems now in use. Diel's classification is as follows:

Class I.—Ribbed Apples (*Kantaepfel*).

1. Around the eye, as well as the fruit as a whole, the apples are very conspicuously ribbed; the ribs are regular and do not make the form irregular.

2. Compared with size of fruit the core is large, open, and often very irregular.

Order 1. TRUE CALVILLES.

1. The taper toward the eye does not begin until at least past the middle of the apple.

2. They are covered with bloom when on the tree.

3. The skin is unctuous, or becomes unctuous in storage.

4. The entire coloring never consists of pure, distinct stripes only.

5. The flesh is light, loose, delicate.

6. The flavor resembles that of strawberry or raspberry.

Order 2. SCHLOTTER APPLES.

1. The skin is never unctuous when handled.
2. They are never covered with bloom.
3. The form is either flat, conical, cylindrical, or tapering.
4. The flavor is not balsamic, but mostly sweetish or sourish.
5. The flesh is granular, loose, and mostly coarse-grained.

Order 3. GULDERLINGE.

1. Flavor is not balsamic, like Order 1, but spicy.
2. Flesh is delicate, almost like that of the Reinettes.
3. Form is conical or flat.
4. The ribs are most prominent only around the eye.

Class II.—Rose Apples (*Rosenaepfel*).

1. They are covered with blue bloom when on the tree.
2. The core is not unproportionately large, but often only regular.
3. They emit a pleasant odor, at least when briskly rubbed.
4. The skin is not unctuous when handled.
5. They are handsomely and regularly ribbed around the eye and often also out over the fruit.
6. Flesh is tender, loose, spongy, fine-grained.
7. They have a delicate rose, fennel, or anise flavor.
8. They are mostly not late keepers, their good flavor terminating with the same year they ripen; often only summer or fall apples. Exceptions from this are the Wintercousinotten and Winterrose apple families.
9. They are mostly striped like a tulip.

Order 1. FRUIT POINTED OR LONGISH.

Order 2. FRUIT GLOBULAR OR FLAT.

Class III.—Rambours (*Rambouraepfel*).

1. They are all large, and include the largest sorts.
2. They have mostly, or almost always, two unequal halves, i.e., one side is lower than the other.
3. They are always ribbed around the eye; the ribs are broad and prominent, and rise, irregularly and obliquely or broadly depressed, the one above the other, out over the fruit.

4. They are always broader than high, and often only apparently high (elongated) in form.

5. The flesh is loose, coarse-grained, and often very pleasant.

Order 1. CORE WITH WIDE CELLS.

Order 2. CORE WITH NARROW CELLS.

Class IV.—**Reinettes** (*Reinetten*).

1. The flesh is fine-grained, delicate, crisp, firm, or so delicate as to be tender.

2. They are mostly the ideal of a handsomely shaped apple, because the convexity or bulge from the middle of the apple toward the calyx is similar to that of the stem, or does not strongly differ.

3. The surface is always covered with gray dots, has russety patches, or is completely covered with russet.

4. Only rarely are they unctuous when handled, the chief exception, e.g., is the EdelreINETTE.

5. Only these have the rich, high, spicy, sugary, subacid flavor, which is called the ReINETTE flavor.

6. More than all other apples these shrivel very readily, and hence, must, of all apples, hang longest on the tree.

7. The really sweet, but yet spicy apples, are classified among the ReINETtes by their form, russety markings, and their delicate or firm flesh.

8. Delicate, firm, crisp flesh brings also into this class apples which cannot of themselves form a distinct class, e.g., the Pippins.

Order 1. ONE-COLORED REINETTES (*Einfarbige Reinetten*).

1. The ground-color is uniform, and ranges from green to the most beautiful golden yellow.

2. The sunny side has no conspicuous coloring or rusty markings, and only the exposed specimens have slight tinges of red.

3. The russet covering is entirely wanting, and often only slight traces of russet streaks or stripes.

Order 2. RED REINETTES (*Rothe Reinetten*).

1. The same as the one-colored or self-colored ReINETtes, but with red on sunny side; the red color, which is pure and not mixed with russet, is its characteristic.

Order 3. GRAY REINETTES (*Graue Reinetten*).

1. The ground-color ranges from green to dingy or dull yellow.
2. The russet covering the entire surface is, or the russet patches covering the larger part of the fruit are, very conspicuous.
3. The sunny side is often a dull, brownish, or ochreous red.

Order 4. GOLD REINETTES (*Gold Reinetten*).

1. On the sunny side they are handsomely washed or striped with carmine.
2. In keeping, the ground-color changes to a beautiful bright yellow.
3. The ground-color and the carmine cheek of the sunny side have light, thin patches of russet, or are covered entirely with russet.

Class V.—Stripelings (*Streiflinge*).

1. All are generally, and nearly always, distinctly striped with red.
2. These stripes are over the entire fruit, or appear only very indistinctly on the sunny side.
3. These stripes may be alone, that is, purely striped; or, in addition, between these stripes on the sunny side the surface may be either dotted or shaded with red, or covered with uniformly washed red. In these cases the stripes are distinctly defined on the shaded side.
4. The core is regular.
5. The flavor ranges from pure sweet to vinous or acid.
6. The flavor is never like that of the Rose apples.
7. They do not shrivel, only when picked prematurely, or after their season is past.
8. They constitute a large and somewhat difficult class in commercial varieties.

Order 1. FLAT STRIPELINGS.

1. Widely varying in the curve or bulge toward stem and eye, and broadly depressed.
2. They are always at least one-half inch broader than high.

Order 2. POINTED OR TAPERING STRIPELINGS.

1. They are also broader than high, taper from the middle of the apple toward the eye, so that the upper half appears conical or pyramidal, and quite unlike the lower half.

Order 3. OBLONG OR CYLINDRICAL STRIPELINGS.

1. The height and breadth are almost equal.
2. They taper gradually from base toward the eye.
3. Or taper from the middle of the fruit toward the stem as well as toward the eye.

Order 4. GLOBULAR STRIPELINGS.

1. The curvatures of the fruit toward the stem and toward the eye are similar.
2. The breadth is equal to the height, or there is only a quarter of an inch difference.
3. Laid in the hand with calyx and stem sidewise they are globular in form.

Class VI.—Pointlings or Tapering Apples (*Spitzaepfel*).

1. Core is regular.
2. The bloom is always absent.
3. They are never striped, and are either one-colored or washed with red on sunny side.
4. They taper constantly toward the eye.
5. The flavor is sweet or vinous, approaching a pure acid.
6. They do not shrivel readily.

Order 1. OBLONG, CYLINDRICAL, OR CONICAL POINTLINGS.

Characters the same as Order 3 of the Stripelings.

Order 2. SHARP POINTLINGS (tapering to a point).

Characters the same as Order 2 of the Stripelings.

Class VII.—Flat Apples.

1. They are always broader than high.
2. They are never striped.
3. They are either one-colored, or more or less washed with red on sunny side, or somewhat shaded.
4. The core is regular.
5. They are never unctuous when handled.
6. They do not readily shrivel.
7. The flavor ranges from pure sweet to pure acid.

Order 1. PURELY FLAT APPLES.

1. The difference between height and breadth is obvious to the eye.
2. Breadth always one-half inch more than height.

Order 2. GLOBULAR FLAT APPLES.

1. The difference between breadth and height is not easily detected by the eye.
2. The breadth seldom exceeds the height by more than a quarter of an inch.
3. The fruit cut transversely through the middle presents halves which are almost or quite equal.

THE DIEL-DOCHNAHL SYSTEM.

1855. Fr. Jac. Dochnahl, of Germany, presented a modification of Diel's System which is herewith given, as translated for Robert Hogg's British Pomology:

Section I.—PLEUROIDEA (Angular or Ribbed).

Having sharp or flat ribs, which extend over the length of the fruit and are most prominent around the eye, where they are most generally situated.

Class I.—*Mala Cydonaria* (Quince-shaped).

Order 1. CALVILLES.

1. They have large, heart-shaped cells, open towards the axis, or often entirely torn; the cells extend very often from the stalk even to the tube of the calyx.
2. They diminish from about the middle of the fruit, or a little above it, toward the eye.
3. They are regular, and provided generally with fine ribs, which do not disfigure the fruit.
4. On the tree the fruit is covered with bloom.
5. They are never distinctly striped.
6. Their flesh is soft, loose, fine, and light, of a balsamic flavor, similar to that of strawberries or raspberries.
7. The eye is frequently closed.
8. Many of them acquire, by keeping, an oily or unctuous skin.

Group I. Fruit red, almost entirely covered with red.

Group II. Fruit parti-colored; yellow; very much striped or washed with red.

Group III. Fruit yellow; of a whitish, greenish, or golden yellow.

Order 2. PSEUDO-CALVILLES.

1. The cells are almost the same as the true Calvilles—very large and open.

2. The calycinal tube is wide and generally very short.

3. They are slightly narrowed toward the eye and flattened toward the stalk.

4. Their ribs are very prominent, especially around the eye.

5. They are aromatic, and have not the balsamic flavor of the true Calvilles.

6. Their flesh is fine, opaque, a little succulent, and almost equal to the Reinettes. Groups I II, III, as above.

Class II.—*Mala Pyraria* (Pear-shaped).

Their flavor is neither balsamic nor aromatic; they are purely sweet or acid; their flesh is granulous and loose.

Order 1. TREMARIA. Seeds loose.

1. They are almost always large apples, the skin of which is neither unctuous nor covered with bloom.

2. They are also furnished with ribs, but they are not so regular as in the Calvilles.

3. The cells are very large, irregular, widened, and generally open.

4. The calycinal tube is most generally widely conical, and does not extend to the cells.

5. They are of a flattened, conical, cylindrical, or pointed shape.

6. Their flesh is loose, more often a little coarse, and of a slightly balsamic flavor.

7. The leaves of these trees are very large, rather deeply dentated, and less downy than those of the Calvilles.

Group I. *Unicolores*. Green, greenish, yellow, or golden yellow, and slightly tinged with red.

Group II. *Bicolores*. Yellow or green, and distinctly striped or washed with red.

Order 2. RAMBURES.

1. They are all very large.
 2. They have almost always the two halves unequal.
 3. They are constantly broader than high, and appear sometimes higher than they are.
 4. They are not furnished with ribs, except around the eye; these are often irregular in numbers and frequently form broad projections on the fruit.
 5. They do not decay, but shrivel when they have passed maturity.
 6. The flesh is coarsely granulous, rarely aromatic, nevertheless often very agreeable.
- Group I. *Capsulis amplis*. Wide cells.
- Group II. *Capsulis angustis*. Narrow cells.

Section II.—SPHÆROIDÆ (Spherical).

They have sometimes prominences on the fruit and around the eye, but never true ribs.

Class III.—**Mala Mespilaria** (Medlar-shaped).

Their flavor is sweet, aromatic, similar to that of the Rose, fennel, or anise.

Order 1. APIANA, or Rose Apples.

1. Their flesh is soft, loose, marrowy, very fine grain, and of a snow-white color.
 2. The cells are almost always regular and closed.
 3. They are regularly ribbed around the eye, and often also over the fruit, but sometimes not at all ribbed.
 4. They have a balsamic flavor, accompanied with a very agreeable odor.
 5. They emit a pleasant odor when briskly rubbed.
 6. When on the tree they are frequently covered with a blue bloom and striped like a tulip.
 7. The fruit is mostly small or middle-sized.
 8. They are mostly of short duration, and lose their good flavor the same year.
- Group I. *Oblongi*. Oblong fruit.
- Group II. *Spæhrici*. Round or flattened.

Order 2. REINETTA (Reinettes).

1. These are apples which generally have the most regular and handsome shape, having the bulge in the middle, at the same distance from the eye as from the stalk.

2. All are dotted, clouded, or entirely covered with russet.

3. They are rarely inclined to be unctuous, but generally rough when handled.

4. They all decay very readily; they must, therefore, be left as long as possible on the tree.

5. Their flesh is fine-grained, crisp, firm, or fine and delicate.

6. They are all charged with only a balsamic, sugary acid, which is called Reinette-flavored.

Group I. *Unicolores*. 1. Having uniform green ground-color, which changes to the most beautiful golden yellow.

2. Having no lively colors or marks of russet on the side next the sun, except those that are very much exposed, and are slightly tinged with red.

3. Having no covering of russet, but only slight traces of russety stripes.

Group II. *Rubri*. Fruit red; having all the properties of the self-colored Reinettes, but on the side next the sun they are of a red color, with a mixture of russet.

Group III. *Ravi*. Russeted.

1. Their ground-color is green, changing to dingy, dull yellow.

2. The coatings of russet are very conspicuous.

3. The side next the sun is often dingy, brownish, or ochreous red.

4. They all decay very readily.

Group IV. *Aurei*. Yellow or golden fruit—Golden Reinettes.

1. On the side next the sun they are washed or striped with beautiful crimson.

2. The ground-color changes, by keeping, to beautiful deep yellow.

3. Over the crimson there is a light thin trace or a complete covering of russet.

Class IV. **Mala Malaria.** Perfect or pure apple-shaped.

They are of a perfectly sweet or vinous flavor, approaching to pure acid.

Order 1. **STRIOLA**, or striped.

1. They are almost always marked with broken stripes of red.
2. These are either over the whole fruit or only indistinctly on the side exposed to the sun.
3. The stripes may all be distinct—that is, clearly and finely striped; or between these stripes, on the side next the sun, the fruit is dotted, shaded, or washed with red; but on the shaded side the stripes are well defined.
4. The cells are regular.
5. The fruit does not decay, except when gathered before maturity, or after the period when it has been properly ripened.

Group I. *Depressa*. Flat.

1. They have the bulge at the same distance from the eye as from the stalk and are broadly flattened.

2. They are always half an inch broader than high.

Group II. *Acuminati*. Pointed.

1. They are broader than high.

2. They diminish from the middle of the apple toward the eye, so that the superior half is conical, and is not at all similar to the inferior half.

Group III. *Oblongi*. Oblong or cylindrical.

1. The height and breadth are almost equal.

2. They diminish gradually from the base to the apex.

3. Or from the middle of the fruit they gradually diminish toward the base and apex equally.

Group IV. *Sphærici*. Round.

1. The convexity of the fruit next the base and the apex is the same.

2. The breadth does not differ from the height, except only about a quarter of an inch.

3. When laid on their sides they present a spherical shape.

Order 2. **CONTUBERNALIA** (Storing apples).

1. Having the cells regular.

2. They are not striped, and are either of a uniform color or washed with red on the side next the sun.

3. They do not readily decay.
4. They are not unctuous when handled.
5. They are never covered with bloom.

Group I. *Acuminati*. Tapering, diminishing toward the eye.

Group II. *Depressi*. Flat. These are constantly broader than high.

THE DIEL-LUCAS NATURAL CLASSIFICATION.

1856. Dr. Ed. Lucas, the leading pomologist of Germany, presented the following:

Class I.—*Calvilles*. Strawberry or Raspberry Apples.

(*Calvillen*, *Erdburaepfel*, *Himbeeraepfel*).

Form: For the most part fruits of medium size, of longish form ("hochgebauter," high-built), nearly always tapering regularly toward the eye, with several rib-like prominences running out over the convexity of the fruit.

Skin: Delicate, tender, never rough, and only in exceptional cases somewhat russeted, almost always becoming unctuous at maturity, covered with bloom on the tree.

Flesh: Soft, loose, aromatic, mostly of strawberry or raspberry-like flavor, here and there stained with red next the skin.

Core: Almost always open, cells torn (slit).

Orders: 1. Ground, colored. 2. Colored. 3. Striped.

Suborders: *a.* calyx open. *b.* calyx closed.

Class II.—*Schlotter Apples* (*Schlotteraepfel*, *Klapperaepfel*).

Form: Size medium, large and very large. Form either flat round (*Backæpfel*), long conical (*Sheepnoses*), cylindrical (the true *Schlotters*), often very irregular because of isolated broad prominences; the convexity of the fruit almost never fully regular.

Skin: Smooth, mostly shining, not, or only seldom, becoming unctuous, firm.

Flesh: Granular, tender, somewhat coarse, seldom spicy, mostly of predominating sourish or sweetish flavor.

Core: Large, irregular, open.

Orders and Suborders as in Class I.

Class III.—*Gulderlings* (*Gulderlinge*).

Form: Size small to medium, more or less ribbed around the eye; partly of flat round form, somewhat pointed toward the eye (*Pseudo-*

or *Hybrid Calvilles*); partly longish conical or cylindrical (true Gulderlings).

Skin: Smooth, often somewhat russeted, mostly yellowish green and greenish yellow, seldom colored.

Flesh: Delicate, almost Reinette-like, quite firm, sweet, vinous, or predominantly sweet and spicy.

Core: Open, with slit cells or axis much open.

Orders and Suborders as in Class I.

Class IV.—**Rose Apples** (*Rosenaepfel*).

Form: Size small, medium and large, with gentle prominences around the eye and partly out over the fruit; form mostly regular, often longish and globular.

Skin: Smooth and delicate with bloom, shining when rubbed and by handling, of spicy fragrance, seldom with traces of russet.

Flesh: Soft, loose, sometimes spongy, yielding easily to pressure, often stained red beneath skin, of delicate spicy, fennel, or rose-like flavor.

Core: Usually closed; axis often hollow.

Orders and Suborders as in Class I.

Class V.—**Pigeons** (*Taubenaepfel*).

Form: Small and medium, not ribbed or not regularly ribbed, longish conical.

Skin: Smooth, shining, delicate, with delicate bloom, rarely with traces of russet.

Flesh: Fine-grained, quite firm, and yet marrowy, juicy, and spicy.

Core: Often four-celled, sometimes open, sometimes closed.

Orders and Suborders as in Class I.

Class VI.—**Pound Apples** (*Pfundaepfel*, *Rambouraepfel*).

Form: Large, and very large, of quite irregular form, sometimes flat round, sometimes longish, one half smaller than the other; mostly with isolated, broad, flat prominences extending out over the fruit.

Skin: Smooth and shining; firm, often tough; rarely traces of russet.

Flesh: Coarse-grained, loose, mostly with predominating acid and but slightly spicy.

Core Cells: Mostly very large and open, but sometimes closed and with hollow axis.

Orders and Suborders as in Class I.

Class VII.—**Rambour Reinettes** (*Rambour-Reinetten*).

Form: Medium size, large, and quite large fruits of more or less Calville-like or irregular form, with broad, sometimes marked, prominences around the curvature of the eye or also over the entire surface.

Skin: Quite firm, seldom quite smooth, mostly with russet traces, ground-colored or only inconstantly reddened on sunny side, never striped.

Flesh: Crisp (breaking), sometimes fine and sometimes coarse-grained, of high, sweet, vinous flavor.

Core: Mostly wide-celled, open and closed.

Order 1. Skin smooth; 2. Skin rough.

Suborders as in Class I.

Class VIII.—**One-colored or Wax Reinettes.**

Form: Small, medium, and large, of regular round or flat round form, seldom longish, without marked prominences.

Skin: Sometimes smooth and shining, sometimes with russet traces, especially on curvature of calyx, in a few sorts becoming unctuous, without red blush or with only a little red on sunny side which is not constantly present.

Flesh: Firm or marrowy, fine-grained, of high, sweet vinous, sometimes very excellent flavor.

Core: Usually regular and closed.

Orders and Suborders as in Class VII.

Class IX.—**Borsdorf Reinettes.**

Form: Small, at the most of medium size, very regular, round or flat round.

Skin: Smooth, shining, with isolated warts and russet patches, ground-colored, colored and also indistinctly or even quite purely striped.

Flesh: Firm, very fine-grained, of high, peculiar sweet, and sweet vinous flavor.

Core: Nearly always regular and closed, only seldom with hollow axis.

Orders and Suborders as in Class I.

Class X.—Red Reinettes.

Form: Small, medium, and large fruits of various forms; sometimes globular and flat round, sometimes longish, with mostly smooth basin, which is only rarely made uneven by flat prominences.

Skin: Shining, mostly smooth, only seldom with russet traces, colored or striped on greenish yellow, light yellow, but never fully golden yellow ground-color; the red blush usually pure and without russet traces.

Flesh: Delicate, crisp, sometimes marrowy and very spicy, of sweet, vinous, high flavor, here and there reddened under the skin.

Core: Sometimes open, sometimes closed.

Order 1, ground-colored. Order 2, striped.

Suborders as in Class I.

Class XI.—Gray Reinettes, Leather Apples, Russets (*Graue Reinetten*, *Lederaepfel*).

Form: Small, medium, and large, of globular and flat round, seldom longish form, and mostly very regular.

Skin: Roughened by patches, markings, and entire coverings of russet, seldom colored; the ground-color gray greenish yellow to dull yellow; the red color, when present, is not pure because of russet traces.

Flesh: Delicate, marrowy, sweet, sweet vinous, and quite spicy (the true leather apples); or a spicy sweet (fennel apples).

Core: Regular and closed.

Orders and Suborders as in Class I.

Class XII.—Gold Reinettes.

Form: Medium and large, flat round, globular, and longish fruits, with basin regular or ribbed; not rarely with broad, flat prominences extending over the surface.

Skin: Quite smooth, rarely entirely smooth, with more or less of russet traces, especially on sunny side, by which the red blush is often made dingy; the ground-color high yellow and golden yellow, the over-color sometimes shaded, sometimes striped. The fruit of young trees smoother and softer to the touch than those from older, which are always rougher.

Flesh: Very delicate, juicy, marrowy, often yellowish, very spicy, and mostly of high, vinous, sugary flavor.

Core: Sometimes open, sometimes closed.

Orders and Suborders as in Class X.

Class XIII.—*Stripelings* (*Streiflinge*).

Form: Small, medium, large but not very large fruits of very variable form, largely roundish, with the bulge or curvature high on the fruit, conical and ribbed.

Skin: Smooth, shining, sometimes delicate, sometimes tough, often with bloom, striped and shaded (marbled), striped, rarely with russet traces.

Flesh: Sometimes firm and granular, sometimes also spongy, more often reddish under the skin, usually pure vinous, more rarely sweet-sour and sweet; aroma mostly wanting.

Core: Mostly regular and closed.

ORDERS.

1. *Mataepfel*, with wide basin, uneven apex, of flat, round or longish globular form.

2. *Bean Apples* (*Bohnaepfel*), with very shallow basin and oblique apex; longish round, often of oblique form.

3. *Round Stripelings*, fruits with even apex; longish round or flat round form.

4. *Pointed Stripelings*, fruits with small very narrow apex and of longish-pointed or roundish-pointed form.

5. *Ribbed Stripelings*, fruits with apex, made irregular by ribs or rib-like prominences; the bulge is also uneven.

Suborders as in Class I.

Class XIV.—*Pointlings* (*Spitzaepfel*).

Form: Of mostly medium and only rarely very large size; of longish, longish conical, or blunt conical, often irregular form.

Skin: Smooth, shining, delicate, seldom with bloom, ground-colored or colored, never striped.

Flesh: Loose and tender, sweetish and vinous to pure acid.

Core: Regular, mostly closed, sometimes with hollow axis.

Order 1. Ground colored; 2. Colored.

Suborders as in Class I.

Class XV.—*Flat Apples* (*Plataetpfel*).

Form: Small, medium and large, flat round or flat globular, usually broader than high.

Skin: Smooth, shining, firm, ground-colored or colored, never striped, often with bloom.

Flesh: White or greenish white, mostly firm and crisp, rarely tender and marrowy, pure sweet to pure acid, never really spicy.

Core: Mostly regular and closed.

Orders and Suborders as in Class XIV.

A DOUBLE SYSTEM OF CLASSIFICATION.

1862. Dr. Ed. Lucas presented the view that every fruit must be classified according to two systems:

1. *Artificial*; based on external characters and period of ripening.

2. *Natural*; based on internal characters and the fruit as a whole.

In his artificial classification Lucas divides first by the season into summer, fall, and winter; each of these groups into flat, round, tapering, oblong, thus giving 12 classes. Each of these are divided into three orders according to color:

1. Ground-colored; 2. Colored; 3. Striped.

Each of these is further subdivided into—1. Calyx open; 2. Calyx half-open; 3. Calyx closed.

This makes a total of 228 subdivisions.

Lucas' natural system follows Diel's closely, but some of the subgroups have been raised to the rank of families, making the total 15. The first 12 are natural groups, the last 3 artificial, containing varieties difficult to classify otherwise.

Lucas' combined artificial and natural classifications give a total of 1620 separate groups. This system has had long and thorough trial in Germany, and is probably the best and most elaborate of the modern natural systems of classification. The account here given is translated from "Einleitung in das Studium der Pomologie," by Dr. Ed. Lucas, Reutlingen, Germany, 1877.

TWO AMERICAN SYSTEMS.

1867. John A. Warder in his "American Pomology" presented the following classification:

Class I. Oblate or flat, having the axis shorter than the transverse diameter.

Order I. Regular.

Order II. Irregular.

Section 1. Sweet.

Section 2. Sour.

Subsection 1. Pale or blushed, more or less, but self-colored and not striped.

Subsection 2. Striped or splashed.

Subsection 3. Russeted.

Class II. Conical, tapering decidedly toward the eye, and becoming ovate when larger in the middle and tapering to each end, the axial diameter being the shorter.

Subdivisions as above.

Class III. Round, globular, or nearly so, having the axial and transverse diameters about equal, the former often shorter by less than one quarter of the latter. The ends are often so flattened as to look truncated, when the fruit appears to be cylindrical or globular-oblate.

Subdivisions as above.

Class IV. Oblong, in which the axis is longer than the transverse diameter, or appears so. These may also be truncated or cylindrical.

Subdivisions as above.

1849. John J. Thomas in his "American Fruit Culturist" arranged apples as follows:

Division I. Summer Apples.

Class I. Sweet apples.

Section 1. Color striped with red.

Section 2. Color not striped.

Class II. With more or less acidity.

Sections 1 and 2 as above.

Division II. Autumn Apples.

Classes and Sections as above.

Division III. Winter Apples.

Classes and Sections as above.

AN ENGLISH ARTIFICIAL SYSTEM.

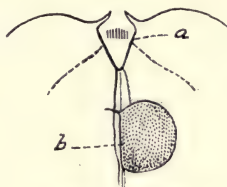
1876. Robert Hogg, the leading pomologist of England, published an artificial system in which new points are considered. The structural characters on which Hogg bases his classification are: 1. The Stamens; 2. The Tube; 3. The Carpels; and 4. The Sepals.

These are all seen when an apple is cut in halves lengthwise from the stem to the calyx. Beginning at the calyx and going inward we find first the calyx segments, which by Hogg and other authors are called the eye, and immediately inside of these segments is a cavity, called the flower-tube or calyx-tube. (By some the word eye is used

to denote both the calyx-tube and the segments.) Inserted in this tube is a ring of small, bristle-like organs, which are the dried-up remains of the stamens, and these occupy three different positions in the tube.

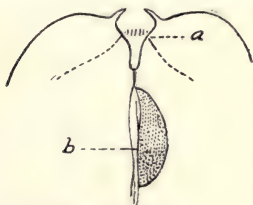


Stamens median.
Tube funnel-shaped.
Core meeting.



a. Stamens marginal.
Tube conical.
Core claspings.
b. Cells round.

The tube itself is either conical or funnel-shaped. Further inside, just beyond the tube, is the core, the cells of which assume four different forms. Each of these varies in its relation to the axis of the fruit, some extending close to it and forming symmetrical cells, while others are distant from it and are unsymmetrical.



a. Stamens marginal.
Tube funnel-shaped.
Core claspings.
b. Cells elliptical.



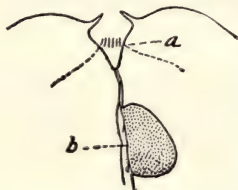
a. Stamens basal.
Tube funnel-shaped.
Core claspings.

1. **The Stamens.**—Hogg adopts the varying positions of the stamens in the tube as the primary divisions of his system, having found by experience that they are on the whole the most reliable characters where all are more or less changeable. The stamens are (1) *marginal*, when near the inner end of the tube; (2) *median*, when near the

middle; (3) *marginal*, when near the outer end. A sharp knife and careful cutting is necessary to determine this accurately. Some varieties have too short a calyx-tube to make three divisions safe, but in general it is a very useful point. Lucas* objects to making the



a. Stamens marginal.
Tube conical.
Core meeting.



a. Stamens median.
Tube conical.
Core claspings.
b. Cells ovate.

position of the stamens the main character in the classification because it would necessitate cutting the specimens at once which is not always desirable nor practicable. However he admits that the characteristic is in fact a good and constant one, in spite of occasional exceptions and variable varieties.



Stamens marginal.
Tube funnel-shaped.
Core claspings.

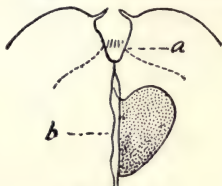


a. Stamens median.
Tube funnel-shaped.
Core meeting.

2. **The Tube.**—When *conical* the outlines proceed from the base of the sepals or segments in a curved line inwards towards the core, forming a cone. These curves are generally inwards, but occasionally they are outwards, as in Fig. 1, which suggested to Hogg the formation of another division, under the name of *urn-shaped*; but he found it appeared so seldom that no importance need be attached to it. When *funnel-shaped* the outlines are as when conical, but instead of ending in a point end in a hollow cavity like the stem of a funnel.

*Dr. Ed. Lucas, *Einleitung in das Studium der Pomologie*. 1877, p. 142.

3. **The Carpels.**—These make up what is popularly called the core. They are generally five, occasionally they are four, or even three, but this is very rare. If split down the middle its walls, or tough membranous lining, will be either *round*, *ovate*, *obovate*, or *elliptical*. To



a. Stamens basal.
Tube conical.
Core clasping.
b. Cells obovate.



Core closed.
Cells axile.

prevent error in distinguishing between ovate and obovate the observer should hold the apple with the calyx towards him, and the stem pointing outwards.



Core open.
Cells axile.



Core open.
Cells abaxile.

In relation to the axis of the apple, they are either *axile* or *abaxile*. When the walls extend to the axis, and these characters will be best seen by making a transverse section of the fruit, the cells are symmetrical, and are then said to be *axile*, whether the core is open or closed. When they are distant from the axis, and the cells are unsymmetrical, they are called *abaxile*. Further, the walls may be *entire*; or *slit* by transverse fissures.

4. **The Sepals or Eye.**—The sepals or segments of the original calyx of the flowers were uniformly expanded and spreading. After the petals of the flower drop, and fruit develops, the segments persist *

* In the various varieties of the pure Siberian crab, *Pyrus baccata*, the segments are deciduous, i.e., fall off as the fruit develops.

and gradually assume various directions, and when it is perfectly matured we find them in four distinct forms: (1) *Divergent*, when the segments are quite recurved or reflexed, frequently so much as to fall back flat on the fruit in the form of a star; (2) *erect convergent*, when the segments are never reflexed, but are erect with their margins merely touching and their points divergent;



Segments divergent.



Segments erect convergent.

(3) *flat convergent*, when the segments are flat, closing the eye, but with their margins merely touching and not overlapping each other; (4) *connivent*, when the segments are all close together, overlapping each other and forming a compact cone. I find the segments are too variable, however, to be depended upon for final judgment in all cases, although they are very useful in many varieties.



Segments flat convergent.



Segments flat convergent.

5. **Core.**—To the foregoing four divisions by Hogg should be added two points given by Warder. If the outline of the core meets on the inner point or end of the calyx-tube, it is *meeting*; if some distance below, it is *clasping*. This is a useful point with many varieties.



Segments connivent.



Segments connivent.

Dr. Hogg's key may now be outlined briefly:

Stamens: 1, marginal; 2, median; 3, basal. Tube: 1, conical; 2, funnel-shaped. Cells: 1, axile; 2, abaxile. Cells: 1, round; 2, ovate; 3, obovate; 4, elliptical. Segments: 1, divergent; 2, erect convergent; 3, flat convergent; 4, connivent.

The above provides for 192 classes, each of which if necessary may be further subdivided by form and color into 8 divisions as fol-

lows: Form: 1, round or oblate; 2, conical or ovate. Color: 1, pale; 2, colored; 3, striped and russet.

The four color divisions are defined as follows: 1, *Pale*: a uniform color of yellow or green, notwithstanding it may be faintly tinged on the sun side with orange or pale red. 2, *Striped*: when the only additional color to that of the ground-color consists of distinct red stripes without any ground-color of red. 3, *Colored*: when the skin is wholly or partially a decided red, and this may be accompanied with stripes or with some russet. 4, *Russet*: that in which a russet coat prevails. When a russet coat has a brown or red cheek the fruit is not on that account to be classed in the colored class.

This makes possible a total of 1536 subdivisions. In the smallest groups the season of ripening is given as a further help to direct reference to the appropriate description.

THE ALPHABETICAL ARRANGEMENT.

1872. Charles Downing, in his Second Revision of "Fruits and Fruit-trees of America," abandoned the arrangement of fruits by classes and periods of ripening, stating his reasons as follows:

"The distinctive characters of fruits have, during the past quarter of a century, become so much intermingled and hybridized that, after carefully studying them, and comparing them with the orders of classification adopted by authors, we have come to the conclusion that no definite order can safely be made to embrace them. Forms, colors, growths, and periods of ripening are so much interwoven and distributed as to defy all arbitrary rules of classification, and hence we have without hesitation abandoned it entirely, substituting in our work the simple order of the alphabet as confined to names, believing such course will prove the most available and useful."

OTHER SYSTEMS.

The available space will not permit of a fuller discussion of the very numerous and elaborate systems of classification proposed by European pomologists. Those already given will indicate the leading ones. It will be noted that even in the most complete natural systems several classes, based mainly on artificial external characters, are necessary to provide a place for many varieties not readily classified otherwise.

AN ARTIFICIAL KEY.

After reviewing the many systems of classifying apples, many of them very elaborate and the product of much painstaking labor and research, the writer offers the following conclusions:

I. The arranging of apples into families based on natural affinities is a great aid to the memory. This is true of all systems of natural classifications.

II. If all varieties of apples were sharply defined in their characteristics the natural systems, as those of Diel and Lucas, would be of easy application, if properly combined with an artificial classification based on form, season, etc., as outlined by Lucas. But many varieties present characteristics which are a mingling of two or more classes, and these defy all attempts at close classification.

III. It would be of considerable help to arrange apples as far as possible by groups named after the most typical representative of that group. American pomologists now often speak of the Ben Davis type or group, being that well-known variety and what are probably its numerous seedlings; the Fameuse type, comprising a number of sorts with close affinities to the mother variety; the Oldenburg type, which is a very large one in the Northwest owing to the wide popularity of that variety; the Hibernial type, including a number of extra hardy Russians. In Minnesota the numerous seedlings of Wealthy now appearing show close affinities to its parent. This modern development of the natural classification idea merits further study.

IV. The marvellous development of commercial orcharding in recent years has not been favorable to increase in number of varieties. Commercial fruit-growers prefer the few of best sorts rather than a large assortment with few trees of a kind. Hence the need for classification of varieties is not yet as apparent as in Europe where a greater variety is demanded in the small specimen orchards.

V. The belief of Downing that the classification of the apples of the United States is impracticable, if not impossible, is probably nearer to the truth than any belief to the contrary. It could be done with the apples for any particular region with not too large an area. On the other hand, the alphabetical or dictionary style of arranging descriptions is not serviceable when the name of the fruit in hand is not known.

VI. A purely artificial key is, in the opinion of the writer, a feasible solution of the problem. Every variety has its distinguishing characteristics or "ear-marks" by which it is known to those familiar with it. In addition to the characters usually given in American descriptions should be added the internal points noted by Hogg, Lucas, and other European writers. It does not appear an impossible task to arrange all these various points, so that the reader, with an unknown variety in hand will need to read through a few varieties only instead of all. The magnitude of this proposed work places it beyond the boundaries of private or State enterprise and makes it an undertaking of national scope.

REPRODUCTION OF VARIETIES.

The beginner should understand that although as many different varieties may be raised from seed of one apple as there are seeds in that apple, it may also happen, especially if inbred by no other varieties being near, that some of these seedlings will be so nearly the same in all respects as the variety from which the seed was taken as to be considered identical even by experienced pomologists accustomed to close observation of fruits. Such seedlings may be called reproductions of the mother variety. It frequently happens in vegetables and flowers that several varieties, very nearly alike, originate in widely separated localities; in such cases only the first one introduced holds its own, the others are dropped. Apples and other orchard fruits do not come true to seed because it has not been found necessary to fix the type by a long course of selection, it being easier to reproduce the variety by grafts, buds, or sprouts. Apples generally are raised in mixed orchards containing many varieties, hence there is every facility for crossing with other varieties, the pollen being carried by insects or the wind. However, some varieties show a prepotent tendency and impress their characteristics strongly upon their offspring. This is especially true in isolated localities where but few varieties are grown, since inbreeding takes place to a considerable extent. The fact that Fameuse reproduces itself so closely from seed may be due to the fact that it was the main variety grown in Eastern Canada by the French Canadians after the unknown parent variety was brought from France; for long periods the trees were raised by the early settlers from seed, hence the seed was inbred.

This probably explains the well-marked families, types, or races

of the Russian apples. Over large areas grafting was but little practised by peasants, and but few varieties grown; hence seed was saved mainly from the strongest, best trees. There is now a large group of seedlings of Duchess of Oldenburg in America, especially in the Northwestern States, which shows resemblance to their parent. In the Southwest many seedlings of Ben Davis have appeared, many of them so near like the parent as not to be worthy of introduction, while others, such as Gano and Black Ben Davis, are an improvement on the parent in some respects. In the Northwest a large number of seedlings of Wealthy have recently appeared, which resemble that variety quite closely. The Wolf River, which is considered to be a seedling of Alexander, has largely superseded its parent at the West because of demonstrated points of superiority. The Concord grape and certain plums and peaches show a strong tendency to reproduce themselves from seed. The late Geo. P. Peffer, originator of the Pewaukee, Peffer, and other apples, claimed that any apple will reproduce itself from seed if inbred by covering the blossoms to prevent access of pollen from other varieties.

BUD VARIATION.

From the foregoing discussion the reader will conclude that propagation by grafts or other mode of division will always reproduce the variety. This is so nearly true that the whole art of nursery propagation may be said to be based upon it. However, it is also true that under certain unknown conditions any one bud may change its character so as to give rise to a new variety sufficiently distinct to be worthy of a separate name. This is termed "bud variation," and is a prolific source of new varieties in certain plants, such as chrysanthemums and roses. Sometimes the change is only slight, and this may be termed a sub-variety. In Northwestern nurseries, for instance, two Wolf plums are now recognized, the freestone and the cling; it is not known, however, whether this is a bud variation or a seedling mixture. The Wealthy apple has apparently varied somewhat under propagation, and recently gave rise to remarks at the Minnesota State Horticultural Society meeting by the son of the originator, who distributed sprouts from the original tree to help settle the matter. Experienced fruit-growers have long noticed that in a large number of apple-trees of one variety in the same orchard some trees are more productive than others. The most advanced

thinkers in this line now recognize this fact as due to bud variation, and take advantage of it by cutting scions for grafting from the best and most productive trees only. Florists long ago learned the necessity of care in taking cuttings from the best and most productive individuals, or even parts of the plant.

TERMS USED IN DESCRIBING APPLES.

Tree.—In closely related varieties it is sometimes essential to know the characteristics of growth in the orchard and the color of the young wood. The color and general appearance of an apple may be changed to a considerable extent by soil and climate, but the general habit of growth and color of young wood does not change materially. For reasons already set forth, however, the pomologist should strive to seek distinguishing characters in the fruit itself, and not be dependent upon the tree in orchard or nursery save as confirmatory evidence.

The growth of the healthy bearing tree may be strong and vigorous; vigorous and slender; stout and short-jointed; medium and vigorous. The form of top may be upright, upright spreading, spreading, round-headed, or upright.

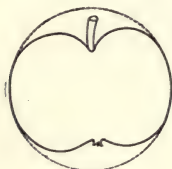
Form.—Some European writers have made elaborate systems based on the form of the fruit. Downing gives only four classes as follows:

“In describing fruits, the word *base* means that part of the fruit in which the stem is planted; and *apex*, the blossom end, or crown, as it is sometimes termed. Forms are so much interwoven, as it were, one with another, that we have selected but four as the primary bases on which all others are built, and are subsidiary.

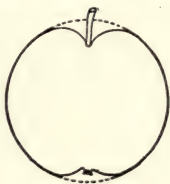
“These primary forms are *roundish*, *oblate*, *conical*, and *oblong*. The terms *round*, *roundish*, or *globular*, are sometimes used in connection, rather as qualifying expressions than as distinctive; for while the word *roundish*, which indicates the height and diameter as nearly equal, applies to many fruits, there is no perfectly round or globular apple known.

“*Oblate* indicates the height as much less than diameter. *Conical*, is when the fruit is roundish, having the apex end contracted. *Oblong*, is when the fruit is longer than broad, and having the apex and base of nearly the same breadth. Connected and subsidiary terms, such as *roundish*, *conical*, or *conic*, are when the apple unites the two primary forms of roundish and conical; or *elongated conical*, or *conic*, when the length is considerably beyond the breadth. *Truncate conic*, is when

the fruit is flattened at the apex. *Ribbed*, or *obscurely ribbed*, when the surface has rising lines and channels from apex to base. *Oblique*, is when the fruit presents the appearance as of being one-sided, or when the axis is inclined to one side. *Oblate*, not *symmetric*, or *sides unequal*, when one side is less than the other. *Corrugated*, having depressed lines, furrows, or wrinkles. *Acute*, when narrowing to a sharp



Oblate.



Roundish.



Conical.



Oblong.

point. *Obtuse*, round or blunt. *Abrupt*, when the depression breaks off suddenly."

Axis.—This is an imaginary straight line between the stem and the centre of the calyx. The axis is *inclined* when the fruit is oblique or lop-sided; *short* when oblate or the cavity and basin are *deep*; *long* when the fruit is oblong. The core-cells are *axile* when they meet the axis; *abaxile* when distant from it. When a section made through the apple at right angles to the axis is circular it is *regular*; if so true that it could be turned in a lathe, it is *very regular*; it may be *irregular*, *compressed*, or flattened sidewise, *angular*, *furrowed*, or *ribbed*, rarely *triangular*, *quadrangular*, or *pentangular*.

Size.—The size is variable, depending upon soil, climate, overbearing, age, and health of tree, etc. The one given is that attained as an average and under normal conditions. The size may be very large, large, medium, small, very small.

Surface.—The skin may be thick or thin, smooth or uneven, lumpy or pimpled, rough, polished, covered with bloom, unctuous or oily, sometimes russeted in whole or in part. The amount of russet varies, especially about the stem. The color usually consists of two, the ground-color of green or yellow, with over-color of red. When the ground-color is not striped, the fruit is self-colored, although it may be blushed or shaded. German writers term it one-colored. The color is a conspicuous feature, but is modified by climate, season, soil, and whether grown in shade or sunshine. Older trees usually yield better-colored fruit. Only well-colored exposed specimens should be selected for determination.

Stripes are broad alternating lines of color. *Streaks* are long, distinct, narrow stripes. *Splashes* are short, abruptly broken stripes of all sizes. When *marbled* the stripes are wide, faint, waving, or irregular. When *washed* or *shaded* the coloring is even, or changes gradually, as in a water-color painting. When *mottled* the dots nearly run together. When in part *dotted*, as in Utter, the red appears as distinct dots. *Blotched* red is of various abrupt shades irregularly placed. When *clouded* the blotches are broader and more softly shaded.

A bright color is sometimes dulled by being overlaid with a whitish or grayish color which is sometimes suffused, or by open russet net-veining. In the latter case it gives a bronzed appearance. In a very few varieties, especially Westfield, the russet about the basin resembles a piece of bent dry leather, and hence is termed *leather-cracking*. Pin scratches are minute dark lines running from stem to eye, especially on Tolman and rarely on Keswick; according to Van Deman they never exceed five and in the Northern climates are much more distinct than in the South or West.

It is impossible to give the exact shade of red in an apple. It may vary from light or pale red to black red. *Crimson* is a clear, beautiful, dark red, with a slight admixture of blue. *Carmine* is a beautiful darker crimson bordering on purple. *Pink* is a clear, bright, light red; *rose* is a delicate pink; *orange red* is when the red is mixed with yellow.

Dots.—These are more numerous towards the eye. As a whole they may be obscure or distinct, many or few, large or minute, white, whitish gray, green, yellow or russet, round, elongated, stellate (star-shaped). When surrounded with light or green bases, they are called areolar by some writers. The dots may be depressed, prominent, even so much raised as to roughen the surface.

Stem.—This is sometimes a constant mark, but is often variable. When reaching to the general curvature of the fruit it is *medium*; when below this outline, *short*; when extending out beyond, *long*. It may be stout or slender; straight or curved, rarely fleshy or knobbed. The color is usually green or brown, alone or in combination, sometimes yellow and somewhat red; as means of identification the color of the stem is not reliable.

Cavity.—This is the depression in which the stem is inserted, and may be wide, deep, shallow, regular, irregular, wavy, uneven, or folded. In a few varieties the cavity is nearly or quite filled up, and is then termed *flat*. It is *obtuse* when blunt or rounded at bottom; *acute* when ending in a sharp point; *acuminate* or *funnel-shaped*, when terminating in a long-drawn-out taper, which usually crowds closely the lower part of the stem; the stem is then sometimes termed *deeply inserted*.

When *lipped*, part of the flesh crowds up against the stem as in Roman Stem, Swaar, and Pryor Red. The color may be green or russeted. When the russet extends out in ray-like lines it is termed *stellate* or *radiating russet*.

Basin.—This is the depression at the apex, crown, or “blossom-end.” It should be carefully distinguished from the *base*, which means the stem-end, carrying out the thought that the foundation or source of the fruit is at the stem. Descriptions generally should read from the stem outward from base to apex. The basin may be flat, very shallow, shallow, medium or deeper, narrow or wide; *abrupt* when the slope is steep; smooth, regular, or even when not furrowed, and so regular and symmetrical that the form could be turned in a lathe; *cup-shaped* when the slope is nearly perpendicular; *angular*, with several corners; *wavy*, with gentle and irregular undulations; *furrowed*, with more regular undulations; *wrinkled*, with small irregular undulations; *corrugated*, with larger irregular ridges; *plaited*, with small, straight, regular ridges; *ribbed*, with larger obtuse or rounded ridges: the bottom may have small isolated prominences. The rim of the basin may be sharp or rounded broadly, or may be smooth or ribbed.

Core.—When an apple is cut in halves crosswise the core is seen in the centre, consisting normally of five cells of tough parchment-like texture containing the seeds and surrounded by flesh. Outside of this is the core-outline or boundary, consisting of ten fibro-vascular bundles, which, carrying the nutriment, emerge from the stem and branch

out over the fruit, meeting again at the calyx-tube. If these unite on the inner end of the tube the core is *meeting*; if lower, nearer the eye, it is *clasping*. Outside of the core-outline is the larger part of the flesh, different somewhat in texture and color from that inside next the cells. The fibro-vascular bundles are either opposite the points of the cells, or alternate with them, usually the larger being opposite the points. The outline of the core is clearly seen only when cut; the fruit is cut in halves lengthwise, and through or near one of the fibro-vascular bundles. Counting from the stem the core-outline may assume various forms, such as cordate, turbinate, oval, roundish, wide, or compressed, or spindle-shaped, long or short, regular or irregular; large when the breadth is considerably over half the diameter of the fruit; small when much less. The core is usually *central*, or in the middle of the fruit, but may be *sessile* or close to the stem, or *distant* when nearer the calyx. The core may be very small and compact, with seeds crowded in the cells; in others the cells are large and roomy, so that the seeds loosen and rattle when the apple is shaken. The other characteristics of the core are given in Hogg's classification.

Seeds.—These may be numerous or few, large or small, from light or gray brown to dark brown or black, short or long, plump or flattened, blunt or pointed, often some are imperfect. The latter is often a constant characteristic. Sometimes the exact number of seeds is given, but this must be understood as being approximate only, the number varying. In a few varieties, such as Saxton and Ortley, the seeds loosen very readily when ripe, and rattle when the apple is shaken.

Flesh.—The color ranges from white to yellow, sometimes with greenish tinge, or stained with red. The flesh may be juicy or dry, firm and compact, or loose, spongy, or marrowy; tender, delicate, crisp, fine- or coarse-grained. The flavor may be sweet, mild, subacid, sprightly or brisk, subacid or sour, acid, very acid, astringent, insipid or rich, highly flavored and spicy. As to odor, the fruits may be sometimes perfumed or aromatic. The quality is expressed by the terms poor, inferior, good, very good, excellent, best. This judgment depends somewhat upon the individual—"there is no accounting for tastes."

Use.—Many varieties of only moderate quality for dessert use are cultivated because of greater productiveness; their bright color may take well in the market, or the fruit be excellent for culinary use.

Some of those ranked as best in quality are not much grown because of shy bearing or weakness of tree.

Season.—The season during which the fruit is best varies with the locality, the season being earlier southwards, and later at the North. The season may be early summer, summer, early or late fall, early winter, midwinter, late winter, or spring.

HOW TO STUDY APPLES.

First study the technical terms employed and the leading systems of classification. This knowledge is then illustrated in practice by comparing good, typical, well-matured specimens of a number of standard varieties with their printed descriptions. The reader is now prepared to make descriptions for himself, and practice will soon give accuracy and facility. The systematic study of fruits should become an important feature of laboratory work in pomology in American agricultural colleges, as it long has been in the horticultural schools of Europe.

The advocates of Nature Study will find rich material for interesting exercises in comparing well-known varieties of apples as well as in other exercises in systematic pomology. Fruit-growers generally will find it advantageous to study characteristics of varieties, and will make rapid progress in such study if it be made systematic. For this purpose outlines or blanks something like the following will save time and serve as an aid to the memory. If the blanks are printed some of the most common terms may be added under each heading, and the appropriate ones indicated by a check mark or a circle around them, or the others crossed out. An impression of the fruit should also be taken. No free-hand drawing is necessary nor advisable. The apple is cut in halves lengthwise, using a sharp knife, so that the calyx-tube is exposed. This will require a little practice; it is best to approach it gradually by cutting several thin slices until the exact axis is reached, the axis always passing through the calyx-tube. The surplus moisture is now removed with blotting-paper or cloth. The edge, core-outline, and calyx-tube, and end of stem, are now touched with a moistened soft indelible or aniline pencil. The apple is now pressed firmly against the paper. The only drawing necessary will be to complete the stem and indicate the position of the stamens; this is done with a hard pencil. The paper should not be too heavy in texture. Thin writing-paper is good for this purpose. A convenient size

for the sheets is about nine and one-half inches long, seven and three-quarters wide, with two holes punched along left-hand side for convenience in binding. Such blank sheets with suitable covers are now used for note-taking in many schools; the advantage being that the sheets can easily be arranged in alphabetical order, and new pages added at any time.

PRINTED BLANK FOR APPLE DESCRIPTIONS.

(Ben Davis).....apple.

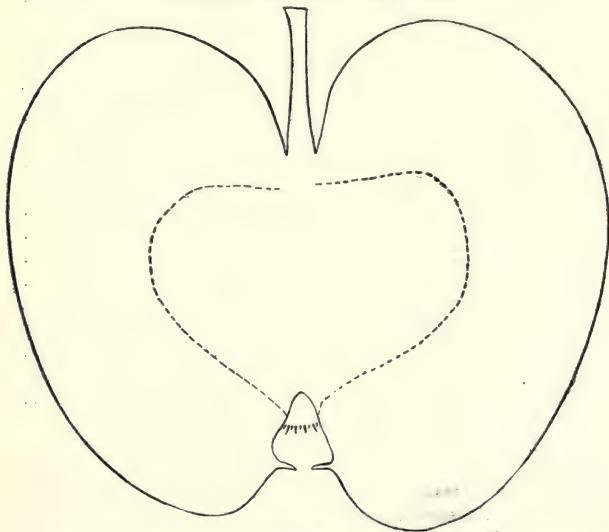
[Space for outline printed
direct from apple.]

Described by.....*Date**Source*.....*Size*: Very large, large, medium, small.....*Form*: Oblate, round, conical, oblong.....*Skin*: Thin, thick, tough.....*Surface*: Smooth, rough, polished, unctuous; (1) pale; (2) colored; (3) striped; (4) russet; ground-color.....; bloom.....*Dots*: Obscure, distinct, few, many; color.....; size.....; areolar.....*Cavity*: Width.....; depth.....; form.....; color.....; stellate russet.....*Stem*: Short, medium, long, slender, stout.....*Basin*: Width.....; depth.....; form.....*Calyx*: Open, half open, closed.....*Segments*: Divergent, erect convergent, flat convergent, connivent.*Core*: Open, half open, closed; form.....; meeting, clasping; sessile, distant.....*Cells*: Axile, abaxile, round, ovate, obovate, elliptical; entire, slit.*Tube*: Conical, funnel-shaped.....*Stamens*: Marginal, median, basal.....*Seeds*: Color.....; size.....; shape.....; number perfect.....; number imperfect.....*Flesh*: Color, texture.....*Flavor*: Acid, subacid, sweet.....*Quality*: Poor, fair, good, very good, excellent, best.....*Season*: Summer, fall, winter, spring.....*Remarks*: Tree, history, etc.....

WHAT VARIETIES SHALL I PLANT?

To give a list of varieties best adapted to every part of the United States would exceed the limits of this book. The question is best answered by consulting the most experienced local fruit-growers, by inquiry of the agricultural experiment stations, by study of the reports and attendance upon the meetings of the local and State horticultural societies, and by a study of the general experience of each region as summed up in the biennial reports of the American Pomological Society. At the present writing this latter report is published in Bul. No. 8 of the Division of Pomology of the United States Department of Agriculture, and may be obtained free upon application to the United States Pomologist at Washington, D. C.

DESCRIPTION OF VARIETIES.

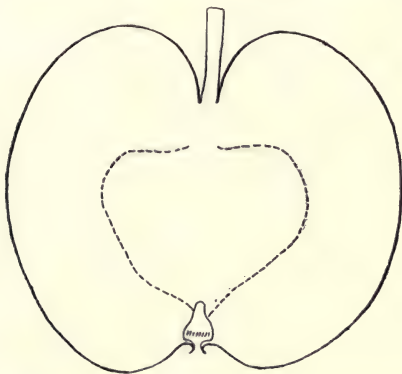


Alexander.

Alexander.—Of Russian origin; tree vigorous, spreading, productive. In the West it is now largely supplanted by its Wisconsin seed-

ling, the Wolf River. Fruit very large, regular, conical; surface greenish yellow, faintly streaked with red on shaded side, but orange on the sunny side, almost wholly covered with bright crimson stripes and splashes, a showy fruit; dots obscure, few, minute, gray; cavity regular, deep, with trace of russet; stem short knobbed at base; basin narrow, abrupt, slightly corrugated; calyx open. Core open; cells ovate, slit; tube conical; stamens basal; seeds short, plump; flesh yellowish white, crisp, tender and juicy, with a rather pleasant flavor, good. October to December.

Anis.—Origin, Russia. Tree very hardy, but fruit too small for mild climates. Several varieties received from Russia prove to be so nearly identical that only one is regarded as necessary in fruit lists to represent



Anisim.

the group. The Russian Apple Nomenclature Commission* adopted the following description. (See also Blue Anis.)

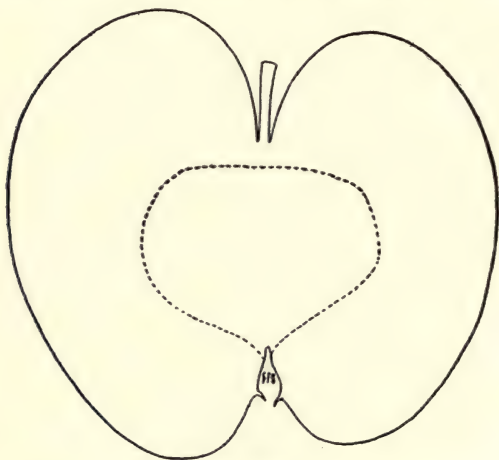
"*Anis.*—Size 4 to 5; form roundish oblate, angular; color light green, striped with red in sun; cavity broad, deep; stem short; basin broad, irregular, angular; calyx medium, closed. Core open; flesh tender, juicy, greenish white, with dark green water line around core; flavor agreeable, mild acid; season September and October; origin, Russia; tree medium upright; fruit drops easily."

*Appointed by the State Horticultural Societies of Minnesota, Iowa, Wisconsin, and South Dakota. Meeting held at La Crosse, Wis., Aug. 30, 31, 1898.

Anisim.—Origin, Russia; tree a strong grower in nursery and orchard; the beautiful color of the fruit attracts favorable attention.

Fruit below medium, roundish conical, slightly angular; surface greenish yellow, covered almost wholly with a beautiful dark crimson, with heavy blue bloom; dots white, minute; cavity regular, acute, usually slightly russeted; stem medium; basin narrow, very shallow, corrugated, sometimes flat; calyx closed. Core closed, clasping; tube short, broad; stamens median; flesh greenish white, with green veins, good. Early winter.

Antonovka.—Origin, Russia; the leading commercial apple of southern Russia. Fruit desirable but tree blights in some localities.



Antonovka.

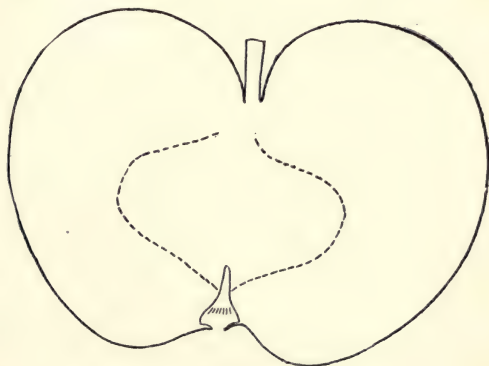
Fruit large, roundish, irregular, obscurely angular; surface yellow; dots minute, raised, white, suffused; cavity deep, regular, with radiating often large patch of russet; stem medium; basin abrupt, corrugated, or wavy; calyx closed. Core closed; cells ovate, slit; tube funnel-shaped; stamens median; seeds numerous, small, pointed, plump; flesh yellow, juicy, sprightly, spicy, subacid, good. October.

Aport Orient.—Origin, Russia. One of the best of the Alexander type.

Fruit large, oblong, regular, slightly tapering; surface greenish yellow, mostly covered with rather dull mixed red, with dark crimson stripes and splashes; cavity acute, narrow, wavy, russeted; stem short; basin abrupt, wavy; calyx open, large. Core half open, meeting; tube conical, very small and short; stamens basal; flesh yellow, coarse-grained, mild subacid, fair. August.

Arctic.—Origin, Cape Vincent, New York; tree a strong, upright grower and early bearer.

Fruit large, regular, roundish oblate, often distinctly angular, or five-sided in large specimens; surface dark solid red, obscurely marbled and mixed, a little yellow ground-color on shady side, with delicate bloom; dots distinct, few, gray; cavity regular, wide, obtuse, with some radiating green or russet; stem short, stout; basin rather shallow, abrupt, somewhat irregular; calyx closed; segments flat convergent. Core small, closed; cells ovate, slit; tube funnel-shaped; stamens basal; seeds plump; flesh yellow, firm, moderately juicy, crisp, mild subacid, good. Midwinter.



Arkansas.

Arkansas (*Arkansaw, Mammoth Black Twig*).—Origin, the Wm. Crawford farm, Rhea's Mill, Arkansas, from seeds planted in 1833 or

1834. The true Paragon originated in Tennessee, and for a time the two varieties were thought to be identical.

Fruit large, very regular, roundish, conical; surface greenish yellow, mostly covered with solid dark to black red on sunny side; dots distinct, numerous, mostly minute, whitish; cavity regular, obtuse, large stellate russet patch; stem very short; basin shallow, nearly smooth; calyx closed; segments connivent. Coreclaspings, half open; cells obovate, slit; tube funnel-shaped; stamens marginal; seeds rather few, short, plump; flesh yellow with yellow veinings, firm, juicy, subacid, very good. Winter. The cut is of an undersized specimen, but typical as to shape.

Arkansas Beauty.—Origin, Arkansas. A showy fruit; specimens from Iowa somewhat higher colored than Southern specimens.

Fruit large, regular, roundish oblate; surface yellow mostly, or entirely covered with rather dull red stripes and splashes; dots obscure, numerous, very minute, brown; cavity obtuse, regular, with some stellate russet; stem long, slender; basin smooth, abrupt, medium deep; calyx closed; segments erect convergent. Core wide open, abaxile; cells ovate, slit, with much cellular exudate; tube conical; stamens median; seeds many, rounded, plump, short, rather small; flesh, yellow, fine-grained, very juicy, tender, pleasant, spicy subacid; quality very good to excellent. Winter.

Arkansas Belle.—Origin, Rhea, Arkansas. Resembles Gano closely in tree and fruit and may prove identical with it.

Arkansas Black.—Origin, Benton County, Arkansas. Considered promising by some, but recently has proven too shy a bearer for profit. Tree of upright growth, wood dark.

Fruit medium, round; surface smooth, solid dark red to black; cavity regular, small to medium; basin shallow; flesh yellow, fine-grained, juicy; quality very good. Season, winter.

Arnold (*Arnold's Beauty*).—Originated by the late Charles Arnold, of Paris, Ontario, Canada, from seed of Northern Spy crossed with Wagener and Spitzenburg. Tree an upright grower, symmetrical, productive.

Fruit medium, oblate, slightly angular, ribbed; surface bright yellow, often with blush of brownish to bright red, usually with patches and network of russet; dots few, brown; cavity large, deep, usually russeted; stem medium, slender; basin deep, rough, slightly plaited; calyx small, closed. Core small; tube funnel-shaped; flesh

yellowish, fine, firm, juicy, rich, mild, pleasant subacid, slightly aromatic. January, May.

Arthur.—Origin, Floyd Co., northern Iowa.

Fruit below medium, oblong, truncated, somewhat irregular; surface yellow, mixed and splashed dull red on sunny side; dots minute, dark russet, numerous, distinct; cavity narrow, regular, acute, russet; stem long; basin abrupt, medium deep, wrinkled; calyx closed. Core closed; tube long, narrow, open to core; stamens median; seeds packed tightly in cells; flesh yellow, firm, fine-grained, sprightly subacid, good. Winter.

Autumn Bough (*Autumn Sweet Bough*).—Origin, America; tree vigorous, upright, round-headed, productive.

Fruit medium, conical, angular; surface smooth, pale yellow; dots few, brown; cavity deep, acute, narrow; stem medium, rather slender; basin deep, corrugated; calyx closed; segments long; flesh white, very tender, with a sweet, refreshing, vinous flavor, very good. Last of August to first of October.

Autumn Swaar (*Fall Swaar of West*).—Origin unknown; tree hardy, vigorous, spreading.

Fruit large, roundish conical, regular; surface greenish yellow, becoming orange yellow, with bronze blush, and russet net-veining; dots many, large, gray, stellate; cavity broad, acute, regular, green and russet; stem medium, knobbed; basin deep, abrupt, smooth or slightly corrugated; calyx small, closed. Core small, closed, clasping; seeds many, large, plump; flesh yellow, juicy, tender, mild, pleasant, rich, subacid, very good. September.

Avista.—Origin, Wisconsin. The original tree is now growing on the farm of A. J. Philips, West Salem, Wisconsin.

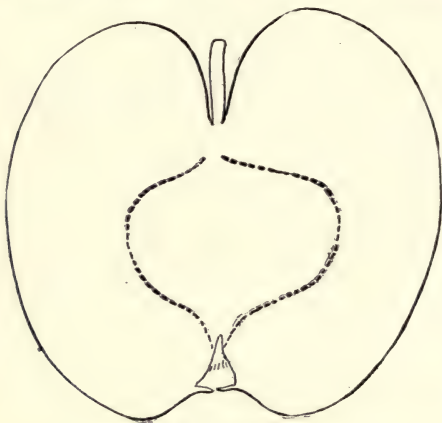
Fruit medium, oblong conical, angular; surface unctuous, yellowish green with greenish streaks; dots white, minute, obscure; cavity wide, green, regular, often russeted, rather shallow; stem long; basin shallow, wavy; calyx small, closed. Core closed; seeds plump; flesh white, very firm, fine-grained, mild, pleasant subacid with sweet aftertaste, very good. Winter.

Babbitt (*Western Baldwin*).—Originated from seed of Baldwin by C. W. Babbitt, of Woodford County, Illinois, about 1845; hardy and productive in Central States. Tree large, a strong grower, with large leaves and tough wood.

Fruit large, oblate conical, angular; skin thick but tender; sur-

face smooth, greenish white, shaded, washed and striped with red; dots few, light; cavity large, regular, deep, with gradual slope, and russet markings; stem short, slender at fruit, thick at base; basin of medium size, regular, abrupt, furrowed; calyx very small and closed; segments very short, converging, slightly reflexed. Core large, wide, conical, open, clasping; seeds few, of medium size, plump, brown; flesh yellowish white, fine-grained, juicy, brisk subacid, very good, particularly for cooking. Winter. (U. S. Agr. Rep., 1893, p. 286.)

Bailey Sweet.—Origin, New York; tree vigorous, productive.



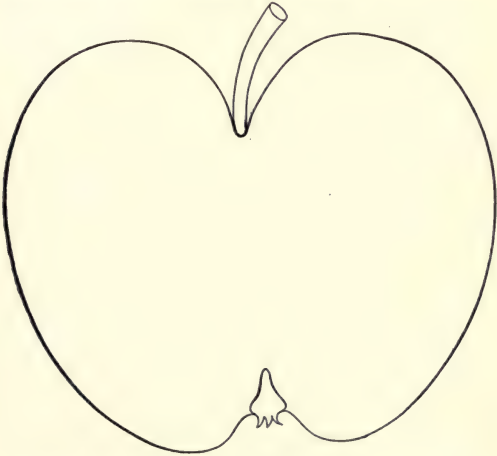
Bailey Sweet.

Fruit large, roundish tapering, obscurely ribbed, irregular; surface roughened by scattered russet dots, yellow, mostly covered with dark rich red, obscurely striped, solid on sunny side; dots many, minute, russet, distinct; cavity regular, acuminate, slightly russeted, deep, narrow; stem short; basin shallow, narrow, abrupt, slightly corrugated, wrinkled; calyx half open; segments entire, divergent. Core closed; tube funnel-shaped; stamens median; seeds large, long-pointed, plump; flesh yellow, moderately juicy, firm, fine-grained, very sweet, very good. Early winter.

Baker.—Origin, Ridgefield, Connecticut; tree vigorous, spreading, productive.

Fruit large, roundish oblate, inclining to conic; surface yellowish, mostly shaded and splashed with shades of crimson; cavity regular, medium; stalk short, moderately stout; basin shallow, slightly corrugated; calyx closed; segments slightly recurved. Core small; flesh yellowish, rather coarse, often tinged with crimson near the skin, pleasant subacid, very good. October to February.

Baldwin.—Origin, Wilmington near Lowell, Massachusetts. A chance seedling which bore its first fruit about the middle of the eighteenth century; now a leading Eastern market variety. Tree vigorous, upright, spreading, very productive.



Baldwin.

Fruit large, roundish, narrowing a little to the calyx; surface rich yellow on shaded side, nearly covered with deep red on sunny side with stripes of crimson and bright red, sometimes overlaid with veined russet; dots minute, russet, or gray; cavity wide, regular, moderately deep, with some radiating russet; stem medium; basin

deep, narrow, generally wavy or plaited; calyx large, half open, or open; segments short. Core closed, meeting or sometimes clasping; cells obovate, slit; tube conical; stamens median; seeds rather few, long, somewhat flattened, many of them imperfect, angular; flesh yellowish, juicy, crisp, rich subacid, very good. Southern-grown specimens are not as good in quality. November to March, at its best in January.

Batallan.—Origin, Transylvania; tree very vigorous, hardy, of spreading habit. Imported from Russia.

Fruit medium to large, roundish oblate, very regular, tapering uniformly toward both ends; surface polished, clear yellow with large carmine blush, with open net-veining and small patches of russet; dots numerous, oblong, brown; cavity regular, deep; stem short to medium, stout; basin deep, slightly irregular, woolly at bottom; calyx half open; segments long, divergent, woolly; tube funnel-shaped, long; flesh white, very juicy, sprightly pleasant acid, good. Late winter.

Beach (*Richardson's Red, Apple of Commerce*).—Origin, Arkansas; tree a good grower and sure bearer; becoming popular in Arkansas for its late keeping and productiveness.

Fruit medium to large, roundish, slightly conical, irregular; surface greenish yellow, almost wholly covered with mixed and marbled rather light red, with broad splashes of darker crimson; dots few, obscure, minute, whitish; cavity regular, rather narrow, medium deep, with considerable radiating russet; stem medium; basin shallow to very shallow, distinctly ribbed, with small prominences around calyx, sometimes deeply corrugated; calyx closed; segments connivent. Core closed, clasping; cells ovate, slit, much exudate; tube funnel-shaped; stamens median; seeds few, plump; flesh yellowish, firm, rather coarse-grained, subacid, good. Late winter.

Beautiful Arcade (No. 453).—Origin, Russia.

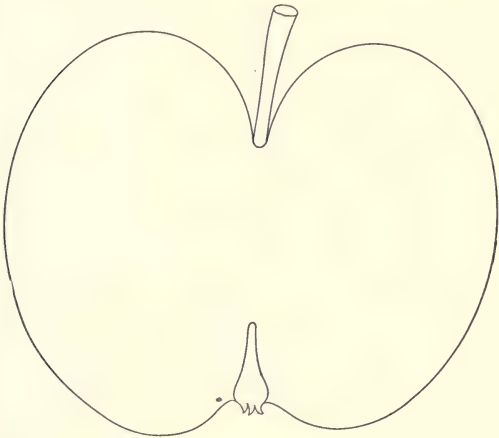
Fruit medium or above, oblong, truncated, angular; surface light yellow, splashed and mixed crimson on sunny side, roughened by the dots; dots numerous, green, obscure, raised above the surface; cavity slightly wavy, abrupt, a little brown around the stem; stem very short; basin regular, corrugated in bottom; calyx small, closed. Core small, half open; tube long, funnel-shaped; stamens marginal; seeds rather large, long, pointed, flattened; flesh yellow, firm, fine-grained, very rich and sweet, very good. August, September.

Belle Bonde.—Origin, France.

Fruit medium or above, roundish conical, pale yellow, striped and splashed with red; dots large, light; flesh whitish, a little coarse, tender, brisk subacid, good for cooking. January and February.

Belmont (*Waxen*).—Origin, Lancaster Co., Pennsylvania; tree vigorous, very productive.

Fruit medium to large, globular, a little flattened, somewhat conical, sometimes oblong; surface very smooth, light waxen yellow, often with blushed orange and bright red cheek; dots minute, few; cavity generally large, wide, wavy, brown; stem medium to long;

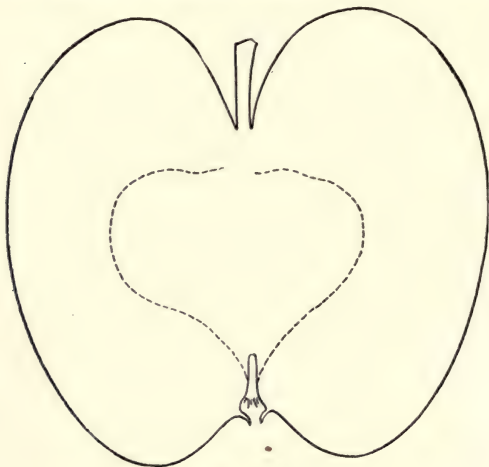


Belmont.

basin wavy or corrugated, medium; calyx small, usually closed. Core wide, regular, somewhat open, clasping, axis short; seeds many, large, flat; flesh yellow, crisp, tender, fine-grained, juicy, mild subacid, nearly best. November to February.

Ben Davis.—Origin in doubt, more probably Virginia or Tennessee; widely disseminated at the South before 1850. In the Southwest and West, especially Missouri, this is the leading winter

apple and is planted very extensively; tree vigorous, an early and very abundant bearer. Although not of first-rate quality the handsome appearance and long-keeping capacity of the fruit make it profitable for market. Southern-grown specimens are better matured than those grown at its northern limits, and hence of better quality. In recent years many seedlings have been raised from Ben Davis, such as Gano, Etris, and Black Ben Davis, which bear a strong resemblance to the parent and indicate that the parent sometimes reproduces itself quite closely from seed.

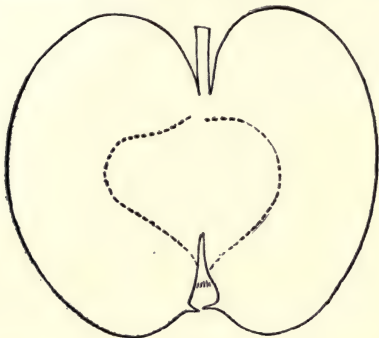


Ben Davis.

Fruit large, regular, roundish conical, truncated, often unequal; surface smooth, often polished, unctuous at full maturity, yellow, almost wholly covered with brilliant mixed dark red with dark crimson splashes and stripes, a handsome, showy fruit; dots distinct, few, minute, gray; cavity deep, regular, acute, usually with much stellate russet which sometimes extends out over base; stem medium to long, rather slender; basin medium, in large specimens deep, wide, abrupt, regular or slightly corrugated; calyx partially open; seg-

ments large, divergent. Core closed, medium, regular, clasping; cells obovate, entire; tube funnel-shaped; stamens marginal; seeds large, long, pointed, plump; flesh white, tender, moderately juicy, pleasant subacid, not rich, good only. All winter and spring.

Benoni.—Origin, Dedham, Massachusetts; tree vigorous, upright, spreading, productive.



Benoni.

Fruit medium; roundish oblate, somewhat conical, obscurely angular; surface rich yellow with a crimson cheek, with distinct broken dark crimson stripes and splashes, marbled and shaded on sunny side; dots distinct, bright, numerous, minute, white; cavity regular, acute, deep, slightly russeted; stem short, slender; basin quite deep, abrupt, nearly smooth; calyx closed; segments divergent. Core closed, small, meeting; cells obovate, axile, slit; tube funnel-shaped; stamens median; seeds plump, some abortive; flesh very yellow with orange veinings, tender, delicate, juicy, pleasant, spicy subacid, perfumed, very good. August.

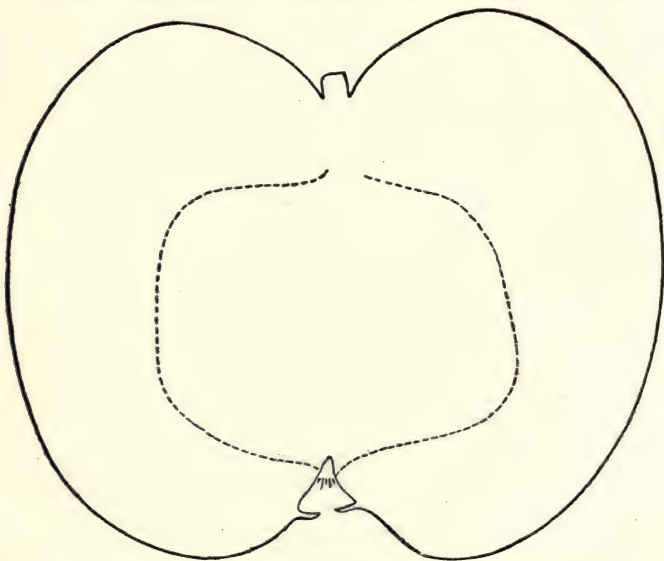
Bentley.—Origin supposed to be Virginia; tree of moderate vigor, productive.

Fruit medium, roundish, truncated, slightly flattened, sometimes a little oblique or unequal; surface pale, yellowish green, shaded, mixed, striped and splashed with pale red; dots few, minute, light brown; cavity regular, deep, acute; stem long, slender, curved; basin large, abrupt, deep, corrugated; calyx large, closed, or partially

open; segments medium length, erect, sometimes a little reflexed. Core small, regular, closed; seeds many, plump, long; flesh fine, yellowish white, compact, sweet, somewhat honeyed flavor, very good. Late winter and will keep sound during the following summer.

Bethel.—Origin, Bethel, Vermont; tree a strong grower.

Fruit large, roundish oblate, slightly irregular and angular, surface greenish yellow, heavily splashed and shaded with carmine with considerable bloom; dots many, greenish yellow and russet, distinct; cavity usually deep, medium width, slightly russeted; stem medium, slender; basin shallow, narrow, nearly smooth; calyx half open.



Eietigheimer.

Core medium; flesh greenish white, with traces of pink, firm, juicy, mild subacid, good. November to late winter.

Bietigheimer (*Red Bietigheimer*).—Origin, Germany; a large and showy autumn apple, attaining enormous size. A specimen at the

Pan-American Exposition from the State of Washington weighed 28½ ounces. Tree a strong grower and of spreading habit; leaves large and shining; an abundant biennial bearer.

Fruit very large to enormous, roundish to roundish oblate, somewhat angular; surface smooth, whitish yellow, almost wholly covered with pale red, with a few obscure stripes and splashes; dots obscure, numerous, whitish; cavity wide, regular, rather shallow, obtuse, green, trace of russet; stem very short; basin narrow, slightly corrugated; calyx closed; segments flat, convergent. Core open, abaxile; cells ovate, widely slit; tube conical; stamens basal; flesh white, quite firm, juicy, brisk subacid, good. Use market and culinary. September.

Bismarck.—Origin, New Zealand. As seen in 1894 by the writer in the nursery of the introducer at Erfurt, Germany, this variety fruits freely on one-year old shoots from the bud; this habit of fruiting on one-year wood, together with its large size has caused it to be boomed extensively. In Dakota and Iowa it has proved tender and subject to blight.

Fruit large, roundish oblate, slightly tapering, somewhat ribbed toward calyx; surface greenish yellow, polished, partially covered with dull red obscure splashes, some russet-net veining; dots obscure, few, whitish, minute; cavity acute, regular, with radiate russet; stem medium; basin abrupt, nearly smooth, with fine wrinkles, calyx open; segments erect convergent. Core half open; cells round, slit; tube conical; stamens basal; seeds short, plump, few; flesh whitish with green veinings, rather coarse-grained, lively, brisk subacid good only. Early winter.

Black, Jersey.—An old variety; tree of moderate growth, spreading round head with drooping limbs, productive.

Fruit medium, round, angular, irregular, somewhat ribbed; surface smooth, wholly covered with deep red, with darker stripes, giving a purple, almost black, color, often with thin bloom; dots many, minute, indented, purple; cavity deep, acute, russet, often wavy or folded; stem variable; basin shallow, corrugated; calyx closed. Core medium, usually closed, clasping; seeds many, short, plump; pointed, dark; flesh yellow, crisp, juicy, often stained pink or reddish, mild, aromatic, agreeable subacid, good. Early winter.

Black Annette.—An old variety brought from Marietta, Ohio, in 1866, by Aaron Plumley, and largely grown for many years in Cedar and

Muscatine counties, Iowa. It does not seem to be the Black Annette of Downing as the fruit keeps till June or later. Has been raised in northern Iowa and merits attention.

Fruit medium, roundish oblate, regular; surface green, almost wholly covered with dark brownish red, with darker splashes, well-colored specimens black red, with splashes mostly lost in the depth of coloring; dots very conspicuous, large, numerous, whitish and russet; cavity regular, obtuse, green and russet; stem medium to long; basin shallow, wide, smooth, sometimes leather-cracked; calyx open; segments erect convergent. Core closed, distant; cells round, nearly entire; tube funnel-shaped; stamens median; seeds short, plump; flesh white, mild, pleasant, subacid, very good. Season, all winter and spring.

Black Ben Davis.—Originated about thirty years ago on the farm of the Rev. M. Black, near Lincoln, Washington County, Arkansas. Reagan was at first given preference, but the above name has priority, and the name Reagan resembles too closely Ragan, an old Indiana variety. It now appears that Mr. Reagan bought the farm from Mr. Black after the tree came into bearing. Recently introduced; promising.

Fruit large, form much like Ben Davis, the skin also becoming unctuous like that variety; surface very handsomely colored, a dark solid crimson, almost black crimson on sunny side, on shaded side the yellow ground-color shows through, no true stripes nor splashes, but shading varies in depth of coloring; dots distinct, few, minute, yellow; cavity obtuse, medium deep, with stellate russet; stem short; basin deep, abrupt, sharp-rimmed, somewhat ribbed; calyx open. Core closed, small, pointed; cells obovate, axile, entire; tube funnel-shaped; stamens marginal; seeds few, long, pointed, large, some imperfect; flesh yellowish white, moderately juicy, mild, pleasant subacid; quality good, better than Ben Davis. Winter.

Black Oxford.—Origin, Maine; there esteemed for its long keeping and productiveness; at Cedar Falls, Iowa, it has done well top-grafted.

Fruit medium, roundish oblate, slightly conical; surface yellow, nearly covered with dark solid brownish red, overlaid with gray net-veining, a peculiar color; dots numerous, conspicuous, light, a few large russet dots; cavity deep, russeted, the russet sometimes extending out over base in large irregular patches; stem long, curved; basin shallow, wrinkled, somewhat leather-cracked; calyx open; segments erect convergent. Core closed, outline irregular; cells ovate; tube

funnel-shaped; stamens median; flesh whitish, firm, moderately juicy, mild subacid, good. March to May.

Bledsoe.—Origin, Kentucky.

Fruit very large, round, somewhat conical, flattened at base, regular; surface greenish yellow, obscurely striped; cavity deep, slightly russeted; stem short; basin somewhat corrugated; calyx half open; flesh white, crisp, fine-grained, juicy, mild, agreeable subacid, good. December to April.

Blenheim (*Blenheim Pippin*, *Blenheim Orange*).—An old variety from Woodstock, Oxfordshire, England; tree of strong, vigorous growth, a regular and abundant bearer.

Fruit large, roundish oblate, slightly conical, very regular; surface very smooth, yellow, becoming deep orange, shaded with solid dull brown red, obscurely streaked darker red on sunny side, sometimes mixed with russet; dots obscure, few, russet, small; cavity regular obtuse, with large patch of radiating russet; stem short, stout; basin medium, regular, smooth; calyx open, large; segments short, small. Core open; cells large, roomy, obovate, axile; tube funnel-shaped; stamens median; flesh yellow, juicy, peculiar mild spicy subacid, good. October to December.

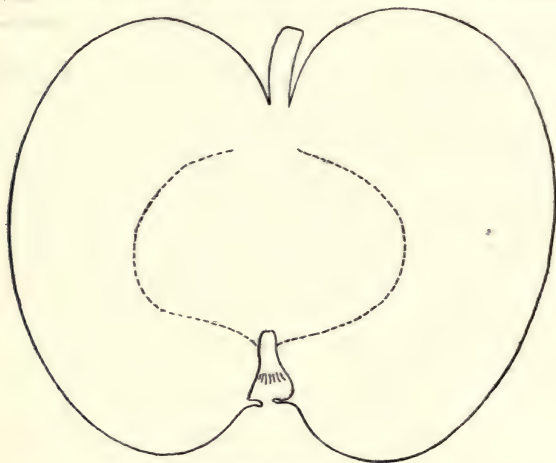
Bloomless and Coreless.—Origin doubtful; varieties of this description have long been known and described. The tree produces flowers with well-developed essential organs, especially the pistils, but the petals are wanting.

Fruit small, dull red, mixed with yellowish green; quality fair. As grown by G. W. Robinette, of Flag Pond, Virginia, the core is usually well developed, with a secondary and even a tertiary core with a few seeds in each, extending towards the calyx, causing an opening there nearly one-half inch in width and depth. Not valuable for the fruit, a curiosity only. (H. E. Van Deman, U. S. Agr. Rep., 1889.)

Blue Anis.—Origin, Russia. (See Anis, p. 37.)

Fruit small, roundish, tapering, angular; skin thin, semi-transparent, and pale yellow to yellowish white, splashed with bright crimson on sunny side; dots very minute, white, obscure; cavity regular, acute, deep, narrow, with russet patch; stem short, touching along lower part of cavity; basin narrow, abrupt, rather shallow, corrugated and wrinkled; calyx closed. Core half open, meeting; tube conical; stamens median; flesh white, juicy, fine-grained, pleasant subacid, good. Fall.

Blue Pearmain.—Fruit very large, nearly regular, roundish to roundish oblong, very slightly conical; surface pale yellow, almost wholly covered with large dark purplish splashes and stripes, mixed nearly solid red on sunny side, the heavy white bloom over dark red ground gives the fruit a bluish color; dots distinct, white, russet,



Blue Pearmain.

minute, some large, gray, with russet centres; cavity wide, deep, obtuse, some stellate russet; stem short; basin shallow, smooth, some with trace of russet; calyx open; segments flat convergent. Core partly open; tube funnel-shaped; stamens median. Flesh firm, moderately juicy, yellowish, spicy, pleasant, rich subacid, very good. October to February.

Blushed Calville (22 M.).—Origin, Russia. Hardy and desirable at the North as a very early apple.

Fruit medium, conical, angular, ribbed; surface yellowish white, with slight blush; dots white, minute, suffused, obscure; basin broad, corrugated; calyx closed; cavity often wavy, often green, sometimes slightly russeted; stem long. Core wide open, clasping; cells large,

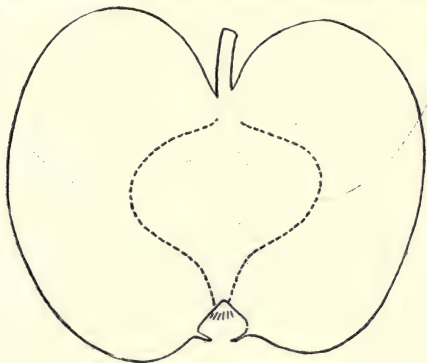
slit; tube broad, conical; stamens median; flesh white, fine-grained, juicy, good. Early summer.

Bode (No. 385).—Origin, Russia; desirable for early summer at the north.

Fruit medium, oblate, somewhat angular, sometimes unequal; surface smooth, polished, yellowish white to white, rarely with faint blush; dots large, white, suffused; cavity wide and very shallow, green and russet; stem thick, very short; basin wide, wavy, fine corrugations about the eye; calyx closed; segments erect. Core closed, meeting; tube broad, but very short; stamens median; flesh snow-white, juicy, subacid, tender, good to very good. Early August.

Bogdanoff.—Origin, Russia.

Fruit medium, roundish to roundish oblong, obscurely angular; surface green, occasionally with a faint bronze blush; dots obscure, numerous, minute, white; cavity wide, regular, obtuse, with slight



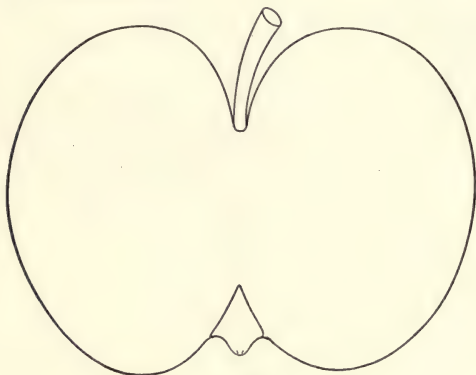
Bogdanoff.

stellate russet; stem short; basin wide, shallow, slightly corrugated; calyx open; segments divergent, large, leafy. Core rather small, meeting; cells obovate, entire; tube conical; stamens basal; seeds many; flesh white, juicy, tender, pleasant subacid, good. Winter.

Boiken.—Named after Dike-warden Boike, of Germany; tree received from Russia. Fruit medium, oblate conical; surface smooth, clear yellow, sometimes with blush; dots very obscure, many, minute,

white; cavity wide, regular, deep, obtuse, with radiating russet; stem long; basin wide, medium deep, wrinkled; calyx open or closed. Core open; cells round; tube conical; stamens median; seeds short, round, few; flesh white, firm, juicy, fine-grained, sprightly, refreshing subacid, very good. Winter.

Bonum.—Origin, North Carolina; tree upright, spreading, an early and abundant bearer.

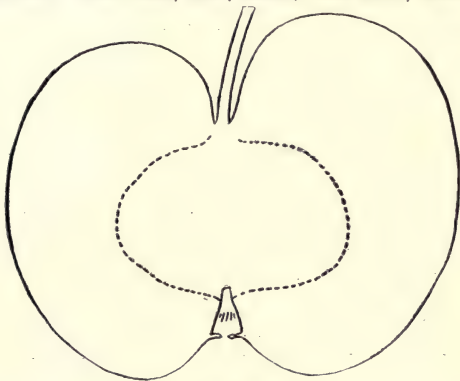


Bonum.

Fruit medium; form very regular, roundish; surface roughened by russet dots, yellow, mostly covered with solid deep crimson and obscure stripes and splashes of dark red; dots distinct, numerous, russet, mostly large, a part with dark centre; cavity regular, wide, obtuse, often with a little green russet; stem long; basin wide, very shallow, slightly corrugated; calyx closed; segments flat convergent. Core small, closed; cells ovate, much slit; tube funnel-shaped; stamens marginal; seeds numerous; flesh white, often stained next to the skin, firm, tender, juicy, rich aromatic mild subacid, very good. November to December.

Borovinka.—Origin, Russia; as grown in the Northwest this variety very closely resembles Oldenburg, but the question of their identity has not been settled. Some growers prefer the Borovinka as an improved Oldenburg.

Fruit medium, roundish, truncated, regular, surface greenish yellow, mostly covered with stripes and splashes of dark crimson mixed and marbled on sunny side and overlaid with whitish net-veining; dots white, obscure, few; cavity acuminate, white, regular, with trace of stellate russet; stem medium; basin rather abrupt, regular, corrugated in bottom; calyx closed; segments divergent, long, pointed. Core closed, axile, sessile; cells round, entire; tube



Borovinka.

conical; stamens marginal; seeds plump, sharp-pointed; flesh white, juicy, sprightly acid, good. August.

Bough, Sweet (Large; Yellow Bough).—Origin, America; an excellent early sweet apple, especially for dessert use in harvest-time.

Fruit above medium, regular, oblong ovate, slightly conical; surface smooth, clear, pale greenish yellow; dots distinct, numerous, minute, russet, with green bases; cavity regular, deep, sometimes russeted; stem long to very long; basin smooth, regular, narrow, shallow; calyx closed; segments erect convergent. Core nearly closed, clasping; tube conical; stamens median; flesh white, very tender, juicy, very sweet, too sweet for cooking, good. July and August.

Bradford (Kentucky Redstreak).—Origin obscure; supposed to be Tennessee; tree upright, vigorous, and productive annually.

Fruit medium, roundish, slightly conic; surface greenish yellow,

shaded with dull purplish red, and indistinctly splashed and striped; dots numerous, large, light, having gray centres, sometimes the number of dots give appearance almost as if mottled; stem medium, calyx closed. Core small; flesh whitish, tender, juicy mild subacid, good to very good. December to March.

Breskovka (152 M.).—Origin, Russia; a hardy variety of the Yellow Transparent type; tree productive, with round somewhat spreading top.

Fruit medium; roundish, regular, often somewhat ribbed toward the calyx; surface smooth, waxen, transparent, clear greenish yellow, becoming a clear white when ripe, no blush nor stripe; dots greenish, minute, numerous, suffused in the transparent skin; cavity regular, acute, with a little russet; stem quite long; basin shallow, regular, usually fine wrinkles around the eye; calyx closed. Core closed; flesh snow-white, crisp, fine-grained, very juicy, subacid, very good. July, early August.

Breskovka much resembles Bielgorod (No. 86 M.), which is identical with Resonant (No. 352), but the stem of Breskovka averages much longer, the fruit is somewhat ribbed, the basin averages wider and shallower, and the cavity is wider.

Brett.—Originated 1872 near Dover, Minnesota, by Mrs. Mary Brett.

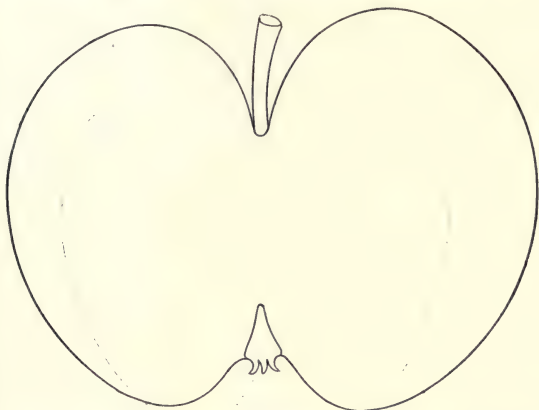
Fruit large, roundish, regular, truncated; surface yellow, with dark crimson stripes on sunny side; dots white, minute, obscure; cavity deep, regular; stem short; basin wide, regular, abrupt, often finely wrinkled; calyx closed. Core closed, clasping; tube conical; stamens median; flesh white, juicy, sprightly subacid, good. Early winter.

Broadwell.—Originated with Jacob Broadwell near Cincinnati, Ohio; tree vigorous, very spreading, irregular, productive.

Fruit medium, oblate, somewhat conic, regular; surface clear bright yellow, brownish blush on the sunny side, with carmine spots; dots few, greenish, suffused beneath; cavity broad, regular, russeted; stem rather short; basin abrupt, regular, rarely plaited; calyx closed; segments short. Core small, closed, round, clasping; flesh yellowish white, firm, juicy, rich, very sweet, very good. November to February.

Bryan, Mrs.—Origin, Walker Co., Georgia. A medium to large late fall variety, of very good quality, recommended in Bul. 8, Division of Pomology.

Buckingham (*Fall Queen*).—An old favorite variety from Virginia; tree upright, slightly spreading, moderately vigorous and productive.



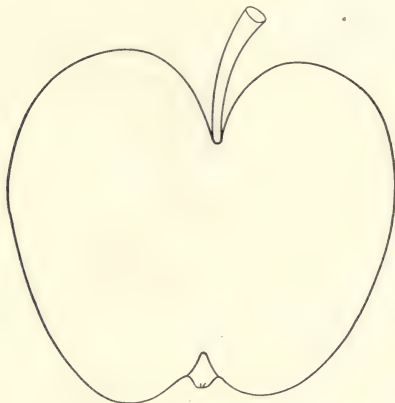
Buckingham.

Fruit large, variable, generally conical or oblate conical, truncated, angular; surface greenish yellow, mostly covered, shaded, striped and splashed with two shades of crimson or purplish red; dots numerous, light brown; cavity broad, deep, slightly russeted; stem short; basin rather large, deep, slightly irregular and corrugated; calyx closed; segments connivent. Core small; axis very short; seeds many, long, pointed; tube conical; flesh yellowish, rather coarse, breaking, tender, juicy, mild, sprightly subacid, very good to best. November to February.

Bullock (*American Golden Russet*).—A delicious apple, with flesh more like a buttery pear than that of an ordinary apple. An old New Jersey variety mentioned by Coxe in 1817. Tree thrifty, shoots upright, dull reddish, grayish brown.

Fruit medium or below, roundish, somewhat conical; surface greenish yellow to orange or golden, with more or less of very thin russet, often with distinct bronzed blush; dots obscure, few, minute; cavity rather shallow, acute, regular; stem long, slender; basin

shallow, regular, rather narrow; calyx closed. Core closed, clasping; seeds many, pointed; flesh yellowish, very tender, juicy, mild, rich, spicy, aromatic subacid, best. October to January.



Bullock.

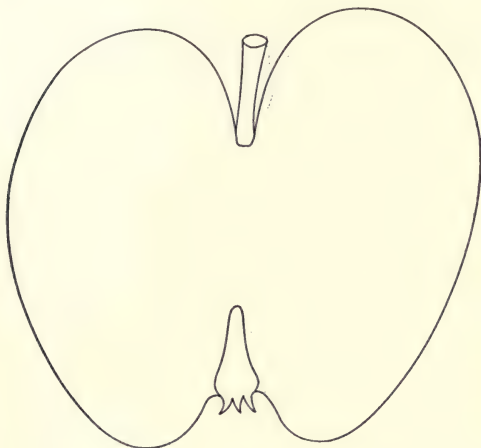
Buncombe (*Red Winter Pearmain*).—Origin, North Carolina; tree a moderate upright grower, and an annual bearer.

Fruit medium, roundish oblong, conic, regular, often unequal; surface smooth, waxy, yellowish white, almost wholly covered with deep purplish red, obscurely striped and splashed; dots obscure, many, minute, white; cavity regular, acuminate, deep, narrow, green or slightly russeted; stem short; basin narrow, smooth, very shallow; calyx closed; segments erect convergent. Core closed, clasping, irregular; cells elliptical; tube funnel-shaped, open to core; stamens marginal; seeds large, flattened, many; flesh whitish yellow, juicy, tender, mild subacid, or nearly sweet, rich, slightly aromatic, good to very good. January to March.

Camack.—Origin, North Carolina; tree of slow growth, an early and abundant bearer.

Fruit medium, roundish, sometimes conical, light yellow green, red on sunny side; cavity narrow; stem short; basin deep; calyx open.

Core small; flesh yellowish, firm, juicy, brisk, pleasant, sweet, good. February.



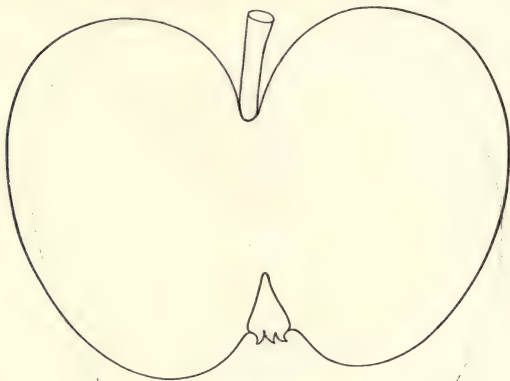
Buncombe.

Canada Baldwin.—Originated in the province of Quebec, Canada, on the farm of Alexis Dèry, St. Hilaire, introduced about 1855; tree of strong upright growth, gradually spreading with age; an early bearer, does best on clay or clay loam; on light warm soils it is injured by sunscald and bark-splitting.

Fruit medium, roundish oblate, slightly angular; surface smooth yellowish white, mostly covered with stripes and splashes of rich red and crimson, a purplish crimson on sunny side with slight bloom; cavity large, wide, deep, regular; stem short, stout; basin medium, deep, slightly corrugated; calyx closed. Core small; flesh very white, fine, sometimes stained with pink, tender, juicy, refreshing, mild sub-acid, with slight quince-like flavor, good to very good. January to April.

Canada Reinette.—Origin doubtful, by some supposed to have originated in France; highly esteemed in Europe. Tree a strong

vigorous grower, spreading, open, productive, young shoots clear reddish brown, slightly downy.



Canada Reinette.

Fruit very large, oblate conical, flattened, with prominent ribs originating at calyx and diminishing toward the stem; surface greenish yellow, with brown blush on sunny side, with numerous russet patches; dots numerous, brown russety; cavity wide, deep, generally smooth; stem short, slender; basin rather deep, irregular; calyx open or closed; segments short. Cells obovate, axile, slit; tube conical; stamen basal; flesh yellowish white, firm, juicy, rich, brisk subacid, very good to best. December to April.

Cannon Pearmain.—Origin, North Carolina; tree vigorous, spreading, productive.

Fruit medium, form regular, roundish conic; surface yellow, striped, shaded, and marbled with red and dark crimson; dots large, yellow, gray; cavity small, russeted; stem long, slender; basin large, regular, deep, abrupt, regular, rarely wavy or corrugated; flesh yellow, firm, with a rich, brisk, subacid flavor, very good. January to April.

Carlough.—Origin, New York; tree vigorous, with roundish spreading head and reddish brown shoots.

Fruit roundish, conical; color greenish yellow, with a faint brown-

ish red cheek; cavity medium, slightly russeted; stem three-fourths of an inch long, slender; basin small, shallow; calyx small, closed; tube short, conical; flesh white, tender, juicy, with a mild subacid pleasant flavor. Ripe in November and apparently a long keeper. (S. H. Fulton, Mich. Exp. Sta. Bul. 177.)

Carolina Beauty.—Origin, North Carolina.

Fruit large, oblate, slightly conical; skin thick, tough; surface smooth, excepting numerous russet knobs; color yellow, washed with crimson and indistinctly striped with darker crimson; dots conspicuous, yellow or russet, many with erupted centres; cavity wide, deep, gradual, russeted; stem three-fourths of an inch long, moderately stout; basin medium, regular, gradual; calyx large, partially open; segments long, narrow, converging to centre and reflexed. Core very large, wide, clasping, nearly closed; seeds numerous, of medium size, angular, dark brown; flesh yellowish, moderately fine, crisp, juicy, subacid, very good. Early winter. (U. S. Agr. Report, 1895, p. 21.)

Carter Blue.—Origin, Alabama; tree of fine upright growth, and an early bearer.

Fruit large, roundish oblate; surface greenish, washed and striped with dull red and covered with a blue bloom; stalk slender; calyx closed. Flesh yellowish white, crisp, sugary, rich, aromatic, very good. September to November.

Catherine.—Origin, Minnesota.

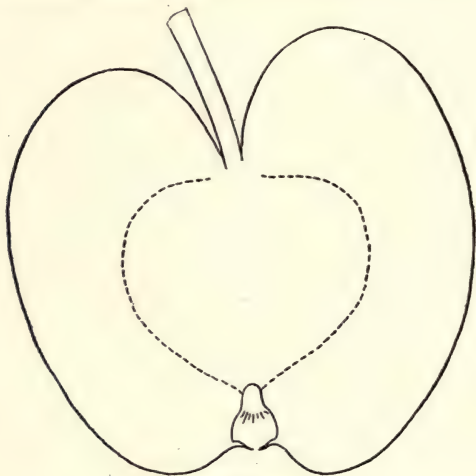
Fruit medium or above, roundish oblate, regular; surface a rich golden yellow with faint blush; dots white, minute, suffused; cavity wide, regular; stem long; basin wide, shallow, minutely wrinkled; calyx open. Core open, clasping; tube funnel-shaped; stamens marginal; flesh white, juicy, subacid, fair. Early fall.

Champlain (*Nyack*; *Sourbough*, *Summer Pippin*).—Origin, Westchester Co., New York; tree vigorous; round-topped, productive, a regular bearer.

Fruit medium to large, roundish conical to oblong oval, angular, irregular; surface smooth, pale waxen yellow with slight crimson blush; dots minute, green and grayish; cavity acute, deep, green, wavy; stem variable, generally long, slender; basin abrupt, corrugated, deep; calyx small, closed. Core round, slightly open, clasping; seed many, angular; flesh white, tender, fine-grained, juicy, aromatic, pleasant subacid, very good to best. August, September.

Charlamoff (*Pointed Pipka*, *Peterson's Charlamoff*).—Origin,

Russia. One of the four varieties recommended by the Minnesota State Horticultural Society as of the first degree of hardiness. Tree spreading, vigorous, productive.



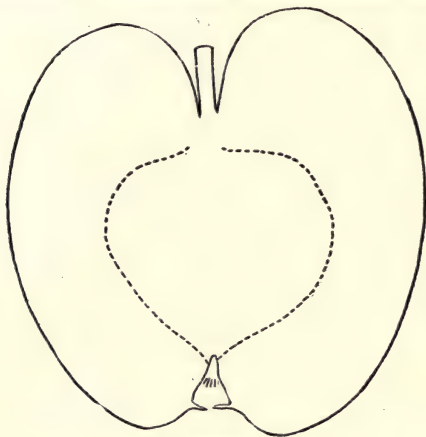
Charlamoff.

Fruit above medium to large, oblong, somewhat truncated, occasionally roundish truncated, angular, ribbed, especially about the stem; surface light yellow covered with dark crimson stripes and splashes, mixed red on sunny side, with a heavy blue bloom; dots white, minute, obscure; cavity, deep, acute, ribbed, with small radiating patch of russet; stem medium to long; basin wide, shallow, corrugated; calyx closed; segments large. Core closed; tube funnel-shaped; stamens median; flesh white, fine-grained, pleasant acid, often slightly stained with red next to skin, good. August.

Chenango (*Chenango Strawberry*, *Sherwood's Favorite*).—Origin, Lebanon, New York. Tree vigorous, spreading; fruit a great favorite for dessert wherever grown.

Fruit medium to large, oblong conic, regular, truncated, obscurely ribbed; surface yellowish white, mostly covered with rosy crimson

stripes, mixed on sunny side and in part thinly overlaid with whitish net-veining; dots distinct, white, few, minute; cavity regular, acute, narrow, somewhat uneven; stem very short, small; basin narrow, shallow, nearly or quite smooth; calyx closed or half open; segments erect convergent. Core rather large, half open; cells elliptical, entire;



Chenango.

tube funnel-shaped; stamens basal; seeds flat, pointed; flesh white, tender, juicy, mild, pleasant subacid, very good. September, October.

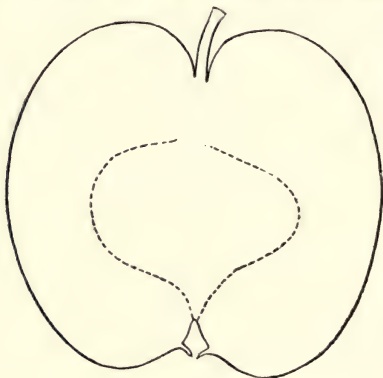
Chisman.—A seedling of Yellow Bellflower from Dallas county, Iowa.

Fruit medium to large, oblong, angular, ribbed; surface yellow; dots distinct, numerous, russet; cavity regular, with trace of russet; stem medium; basin narrow, ribbed, rather shallow; calyx closed; segments connivent. Core closed; cells ovate, widely slit; tube conical; stamens median; seeds few, plump, short; flesh juicy, pleasant spicy subacid, very good. Winter.

Christmas (No. 310).—Origin, Russia. It is doing well in Minnesota.

Fruit medium, roundish conical to oblong oval, sometimes obscurely three-sided, often oblique; surface yellow, with bright crimson stripes

and splashes on sunny side, often nearly covering the whole surface, then a beautiful fruit; cavity narrow, acute, with a little russet; stem long; basin flat or nearly so, when flat the basin has protu-



Christmas.

berances around the eye; calyx closed; flesh white, juicy, tender; subacid, very good. Late fall.

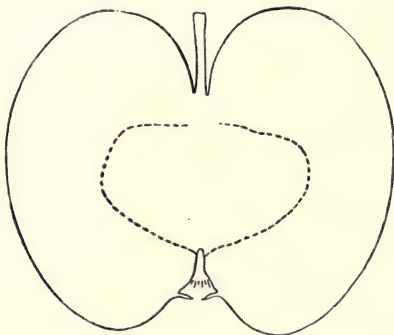
Clark Pearmain.—An old variety of North Carolina origin; tree of slow growth, very productive.

Fruit medium, roundish, slightly conical, truncated, regular; surface greenish yellow, nearly covered with rich dark red splashes and stripes, coloring solid on sunny side; dots very distinct, numerous, large, yellow, with large russet centres; cavity deep, regular, obtuse, with radiating russet; stem very short to medium; basin regular, smooth, small; calyx small; closed; segments divergent. Core closed, scarcely clasping, small; cells obovate, entire or nearly so; tube funnel-shaped; stamens median; seeds short, very plump; flesh yellow, fine-grained, rather firm, crisp, rich, spicy subacid, very good. December.

Clayton.—Origin, central Indiana.

Fruit large, regular, oblate, conical; surface smooth, greenish yellow, covered with dull red, with darker stripes and splashes;

dots minute, obscure, few, gray, with large scattered russet dots; cavity wide, wavy, deep, acute, green or russet; stem stout, medium; basin narrow, shallow, abrupt, smooth; calyx closed. Core wide open, clasping, sessile; cells round to obovate, abaxile, slit; tube funnel-shaped, long, narrow; stamens marginal; seeds numerous, plump,



Clark Pearmain.

angular, short, dark; flesh yellow, firm; not fine-grained, subacid, good. All winter.

Clyde Beauty—Origin, Clyde, New York; tree vigorous, upright, very productive.

Fruit large, roundish; conic, angular; surface greenish, oily, sprinkled and mottled with dull red and bright red in the sun; cavity acute; stem short, slender; basin small, corrugated; calyx closed; flesh white, tender, juicy, brisk subacid, good. October to January.

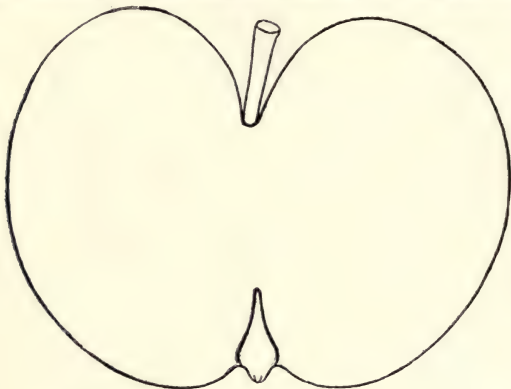
Cogswell.—Origin, Griswold, Connecticut.

Fruit above medium, roundish, oblate, regular; surface rich yellow, nearly covered with red, marked and streaked with bright red; dots many, areole; cavity large, thinly russeted; stem short, rather slender; basin small, shallow. Core small; flesh yellowish, fine-grained, tender, juicy, scarcely subacid, rich aromatic, very good to best. December to March.

Collins (Champion).—Originated thirty-eight years ago on the old Merriam farm near Fayetteville, Arkansas; named in honor of

the introducer, Geo. Collins; tree a vigorous grower in nursery and orchard, very productive.

Fruit large, roundish oblate, slightly unequal; skin of medium thickness, tough; surface moderately smooth, with some fine leather-cracking, yellow, washed with dull and bright red, splashed and striped with crimson; dots light russet, many with dark centres; cavity large, regular, deep, flaring, russeted and slightly lipped; stem about



Cogswell.

one inch long, of medium caliper, curved, largest at twig; basin large, regular, deep, abrupt, slightly furrowed and downy; calyx medium, closed, or partially open; segments short, wide, converging. Core medium size, conical, clasping, partially open; seeds few, of medium size, plump, brown; flesh yellow, satiny, moderately coarse, crisp, moderately juicy, subacid, good. Winter. (U. S. Agr. Report, 1895.)

Colman.—A cross of Jonathan with Northern Spy pollen, originated by A. F. Colman, Corning, Iowa. 1902 was the third year of bearing; tree productive.

Fruit large, round, somewhat truncated; surface waxen yellow, thinly striped and splashed bright red, mixed on sunny side; dots minute, white, obscure, few; cavity deep, narrow, regular, acuminate,

with small stellate russet patch; stem very short; basin smooth, cup-shaped, narrow; calyx closed; segments flat convergent. Core closed; cells ovate, slit; tube conical; stamens median; seeds numerous, plump; flesh white, juicy, spicy subacid, quality excellent, worthy of its parents. Early winter. Promising for dessert and market.

Colton, Early.—Origin unknown; tree vigorous, upright, spreading.

Fruit medium, roundish toward either end, slightly ribbed; surface pale greenish yellow, often with brownish red blush; dots large, many, obscure, greenish; cavity narrow, regular, shallow; stem medium stout; basin shallow, corrugated, narrow; calyx nearly closed; segments divergent, rather long; tube funnel-shaped; flesh whitish, crisp, juicy, sprightly subacid, good. August.

Cooper.—Origin unknown; supposed to be some old Eastern variety; by some thought to be from France; tree vigorous, productive.

Fruit large, roundish oblate, regular, sometimes unequal; surface pale waxen yellow, with a few stripes and splashes of bright mixed scarlet and very distinctly marked carmine; dots few, minute, brown; cavity wide, regular, green; stem medium, green; basin regular, abrupt, deep; calyx small, closed. Core small, closed, meeting; seeds numerous, plump, short, dark; flesh pale yellow, tender, juicy, vinous, mild aromatic subacid, good to very good. September and October.

Cooper Market.—Tree vigorous, upright, with long slender branches; very productive.

Fruit small to medium, round oblate conic; surface greenish yellow, heavily shaded with purplish red and striped with crimson; dots few; cavity deep, narrow; stem short to medium; basin small, shallow, slightly irregular; calyx closed. Core medium, somewhat open; flesh white, tender, brisk subacid, good. December to May.

Cornell Fancy.—Origin, Pennsylvania; tree vigorous and productive. A valuable September variety in Central Pennsylvania.

Fruit medium, oblong, conical; surface waxen, yellow, shaded and splashed with crimson; cavity rather large; stem medium; basin abrupt, corrugated; calyx closed. Core medium to large; flesh white, tender, crisp, juicy with a pleasant subacid flavor, very good.

Cracking.—Origin, Ohio; tree a strong spreading grower and productive.

Fruit large, roundish oblate, slightly conical, obscurely ribbed, somewhat uneven and irregular; surface smooth, greenish yellow, with a slight tinge of red when fully ripe; dots many, minute, indented, green; cavity acute, wavy, slightly russeted; stem short; basin wide, corrugated; calyx closed. Core open, large, clasping; seeds large, pointed, dark; flesh yellow, tender, juicy, crisp, subacid, very good. September, October.

Cresco.—Originated in 1869 or 1870 by J. B. Mitchell, Cresco, northern Iowa.

Fruit medium, roundish oval, regular; surface light yellow with blush or warm cheek; dots minute, white, [suffused, obscure; cavity deep, acute, narrow, with radiating patch of russet; stem long, slender; basin wavy, corrugated, abrupt; calyx closed; segments large. Core closed, outline indistinct; cells ovate, slit; tube long, funnel-shaped; stamens marginal; seeds short, plump; flesh white, pleasant subacid, good. October or later.

Crimson Beauty.—Originated by F. P. Sharp, Woodstock, New Brunswick, by crossing New Brunswick with Fameuse pollen. A good early variety of remarkable beauty.

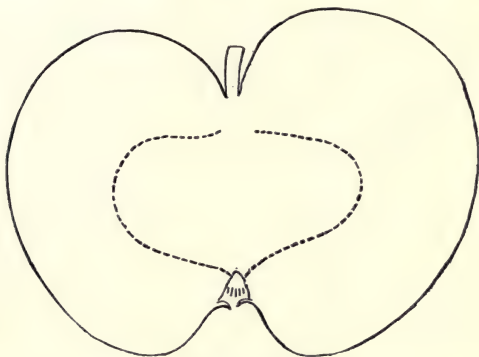
Fruit large, roundish, flattened at ends, slightly oblique and angular; surface yellowish white, overspread with crimson red, with irregular and often indistinct stripes; cavity deep, abrupt; stem long, quite stout; basin abrupt, quite deep, ridged and often corrugated. Core open, not meeting; flesh yellowish white, fine-grained, juicy, subacid, very good. Very early, about one week earlier than Yellow Transparent.

Cross (No. 413 Dept.).—Origin, Russia.—The Russian Nomenclature Commission called this the Cross Apple to distinguish it from Cross (15 M.). Prof. Budd suggests the name Large Anis for Cross 413. As the name Cross has long been given to another apple in Maryland it appears that Nos. 15 and 413 Dept. must be retained for the present.

Fruit medium to large, regular, oblate; surface yellow, mostly covered with mixed dark red and crimson splashes and stripes; dots minute, white, obscure; cavity regular, with a radiating patch of russet; stem short; basin wavy, abrupt, with fine wrinkles; calyx half open. Core closed, meeting; tube conical; stamens median; seeds numerous, short, plump; flesh white, pleasant subacid, good. Late fall.

Cross (No. 15 M.).—Origin, Russia.

Fruit medium, oblate, regular or nearly so; surface a rich yellow, more or less striped and splashed with crimson; dots white, obscure; cavity deep, regular, somewhat russeted; stem medium; basin shallow, abrupt, wavy; calyx large, open. Core open, clasping; tube



Cross (413 of Department).

conical; stamens marginal; seeds large, dark brown; flesh white, brisk subacid, not spicy, good. Early winter.

Cullasaga.—Originated by Miss Ann Bryson, Macon Co.; North Carolina. Tree a good grower and very productive.

Fruit medium to large; roundish, inclining to conic, sides sometimes unequal; surface yellowish, mostly shaded and striped with dark crimson; dots few, whitish; cavity deep; stem small, short; basin shallow, corrugated; calyx open. Flesh yellowish, rather compact, moderately juicy, mild subacid, good. November to April.

Danvers Sweet.—Origin, Danvers, Massachusetts; tree productive and of very rapid growth.

Fruit large, roundish oblong, sometimes roundish oblate, regular; surface smooth, uneven, dull greenish yellow, with orange blush; dots numerous, medium, prominent, with white and green bases; cavity wide, deep, brown; stem long, slender, knobby; basin smooth, deep, narrow, abrupt; calyx small, closed; segments long. Core

round, regular, closed; seeds numerous, long, brown, pointed; flesh yellow, fine-grained, juicy, firm, very sweet and rich, very good; good for baking. All winter.

Delicious.—Originated by Jesse Hiatt about twenty years ago near Des Moines, Iowa; tree a regular and heavy bearer.

Fruit large, roundish conic, ribbed; skin medium thick, tenacious; surface smooth except the ribbing; color yellow, washed with mixed red, splashes and broken stripes of bright crimson; bloom whitish; dots numerous, small, yellow, some indented; cavity regular, large, deep, gradual, russet; stem medium, stout; basin regular, large, deep, gradual, furrows and knobs; eye medium, closed; calyx segments medium, erect or reflexed at tips. Core conical, clasping, medium; seeds plump, medium, brown; color yellow; texture fine, tender, juicy; flavor subacid, very pleasant; quality good to very good. Early winter. (U. S. Div. of Pomology.)

Derby.—Originated on the Capt. Wright farm, Derby, Vermont; tree of hardy, strong, thrifty growth, and an early and abundant bearer.

Fruit above medium; form oblate; surface yellowish, shaded with red and striped with dark red on sun side. Flesh crisp, pleasant subacid, good. Fall and early winter.

Domine.—Origin, New York; closely resembles Rambo externally, but the latter is a choice early winter or autumn variety while Domine is a sprightly, juicy, long-keeping, winter fruit. Tree upright, vigorous, very productive and an early bearer.

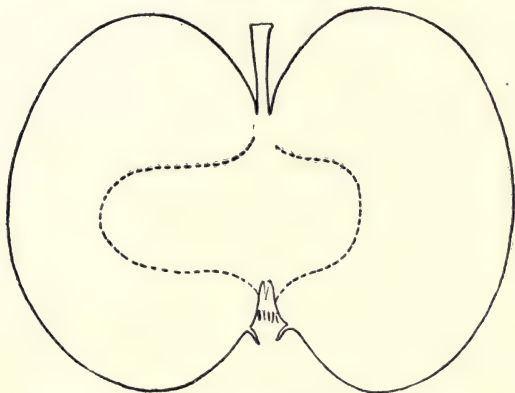
Fruit rather large, regular, oblate, surface greenish yellow in shade, mostly covered with splashed and striped bright red in sun, overlaid with whitish; dots distinct, many, very large, some scattered irregular russet specks with light bases; cavity regular, very wide and deep, with large stellate russet patch; stem medium, rather slender, curved; basin wide, medium deep, slightly ribbed; calyx closed; segments connivent. Core open, barely clasping; axis short; cells ovate, entire; tube conical; stamens marginal; seeds many, long-pointed, plump; flesh whitish, very tender, juicy, pleasant, rich sprightly subacid, very good. December to April.

Donneghan.—A medium early Vermont variety of very good quality, mentioned in Bul. No. 8, Div. of Pomology.

Doyle.—Origin, Texas.

Fruit above medium, roundish; skin tough; surface moderately

smooth, with numerous russet patches, yellow, washed red, splashed and striped crimson; dots brown, erupted; cavity regular, large, deep, wide russet margins; stem medium, slender; basin regular, medium,



Domine.

gradual with shallow furrows; calyx small, partially closed; segments small, converging, slightly reflexed. Core large, conical, clasping; seeds medium, plump, brown; flesh yellowish, fine, breaking, juicy, rich, aromatic, subacid, very good. August. (U. S. Dept. Agr., 1902.)

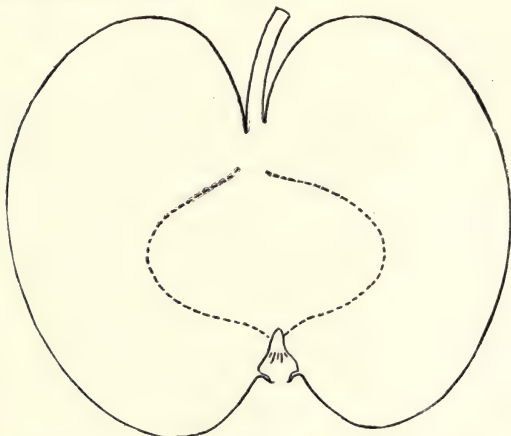
Dudley Winter (*North Star*).—A bright-colored seedling of Oldenburg, originated by J. W. Dudley, Aroostook Co., Maine, and sent out under the name of North Star by a Rochester nursery; but this name is already occupied.

Fruit large, regular, roundish oblate; surface smooth, yellow, mostly covered with bright rosy crimson stripes and splashes, coloring nearly solid on sunny side, with thin bluish bloom; cavity regular, wide, obtuse, with trace of stellate russet; stem long; basin deep, abrupt, corrugated and ribbed; calyx closed; segments erect convergent. Core closed; cells round, widely slit; tube conical, rather urn-shaped; stamens median; seeds plump, pointed; flesh yellow, white inside the core outline, fine-grained, pleasant subacid, very good. Late fall and early winter.

Dutch Mignonne. — Origin, Holland; tree vigorous, upright, spreading, productive.

Fruit large, roundish oblate, slightly conical; surface rough, yellow, shaded with light and dark rich red, with bright red stripes and splashes; dots many, prominent, light russet; cavity deep, acute, regular, large, often russeted; stem medium to long, slender; basin large, abrupt, wide, slightly corrugated; calyx small, closed; segments short, erect convergent. Core small, clasping; cells obovate, axile; tube conical; stamens marginal; seeds few, angular, imperfect; flesh yellowish, coarse-grained, tender, firm, juicy, rich mild subacid, very good. December to March.

Dyer.—An old French variety, originally described as *Pomme Royal* (*Pomme Royal*), but the name having been lost in this country it was given its present name. The tree is a fair grower and an annual and early bearer, but the thin skin of the fruit prevents distant shipping without bruising.



Dyer.

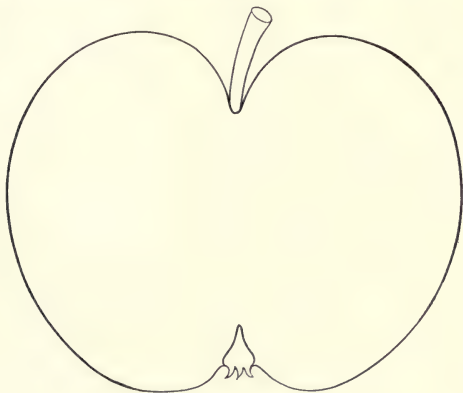
Fruit medium to large, roundish, somewhat flattened, obscurely ribbed; surface smooth, clear, greenish yellow, with rarely a faint blush, and with more or less thin russet net-veining; cavity regular,

deep; stem medium; basin medium, abrupt, ribbed; calyx closed; segments long, divergent. Core open, round; tube funnel-shaped; stamens median; seeds many, small; flesh yellowish white, spicy, very tender and juicy, rich aromatic, sprightly subacid; quality excellent to best, having but few equals. October to December.

Early Cooper.—Grown in Illinois, Kansas, and other western States mainly for home use; tree productive.

Fruit medium, roundish, a little flattened; surface yellow with faint blush, tinge of green at stem. Flesh white, crisp, sprightly. September and October. (Elliott.)

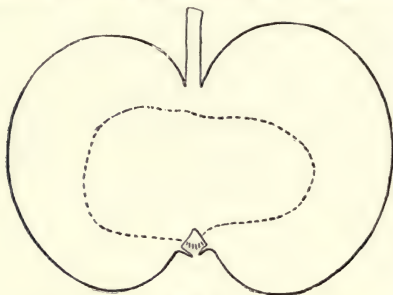
Early Harvest.—Of American origin; tree moderately vigorous, upright, spreading, productive, needs rich cultivation.



Early Harvest.

Fruit medium or below, roundish, often roundish oblate, usually oblate at the West; surface very smooth, clear, pale waxen yellow, very rarely blushed; dots obscure, few, minute, white and green; cavity wide, regular, obtuse, with russet patch; stem medium; basin wide, shallow, smooth. Core small, closed; cells obovate; tube conical or funnel-shaped; stamens marginal or median; seeds few, large, pointed; flesh very white, tender, juicy, crisp, sprightly, pleasant rich subacid, very good to best. The first three weeks of July.

Early Joe.—Origin, Ontario Co., New York; tree of slow growth, productive, requires high cultivation. The poor growth of this variety in nursery makes it undesirable for the nurseryman.



Early Joe.

Fruit below medium, regular, oblate; surface smooth, greenish yellow, thinly shaded, stripes and splashes of dark and light red; dots obscure, minute, gray, and some conspicuous greenish white specks; cavity large, wide, regular obtuse, with stellate russet, occasionally lipped; stem medium to long, stout; basin narrow, abrupt, smooth; calyx closed; segments connivent, leaf-like. Core closed; cells round, slit; tube conical; stamens marginal; seeds numerous, short, plump, pyriform; flesh yellowish, very tender, juicy, fine-grained, spicy subacid, vinous, best. Early August to middle of September.

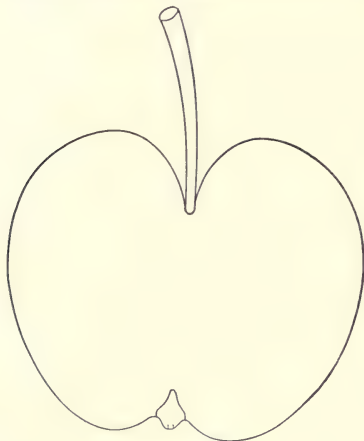
Early Pennock.—Of American origin; tree hardy, an early and abundant bearer; a favorite, showy market apple in parts of the West.

Fruit large, roundish conical, tapering sharply, ribbed, sometimes inclined; surface golden yellow mostly covered with bright red, striped, splashed, and mottled with rosy crimson, a handsome fruit; dots obscure, many, minute, white; cavity deep, regular, narrow, acuminate, with a little stellate russet; stem short or medium; basin very shallow, narrow, slightly wrinkled; calyx closed; segments erect convergent. Core open, long, tapering to both ends; cells elliptical; tube conical; stamens median; seeds large, many, plump; flesh yellow, coarse grained, subacid, scarcely good. July and August.

Early Ripe.—Supposed origin, Pennsylvania; tree a free grower and productive.

Fruit medium, roundish oblate; surface pale yellow; dots few; gray; cavity slightly russeted; stem long; calyx small, closed; flesh white, tender, juicy, subacid, good. August.

Early Strawberry.—Origin, New York; tree thrifty, very upright while young, spreading and large with age, quite distinct from the *Early Red Margaret*, which has no fragrance, and a short stem.



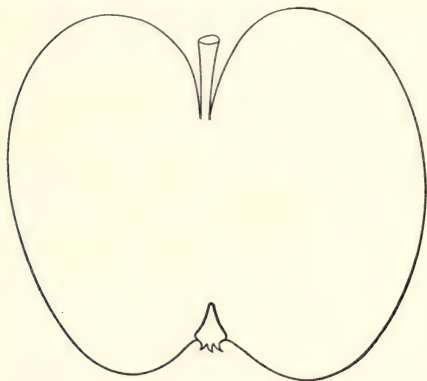
Early Strawberry.

Fruit small, roundish, conical, rarely angular; surface smooth and fair, often polished, yellow, mostly covered with mixed red with bright and dark crimson stripes; dots very few, minute, obscure; cavity deep, regular; stem long, rather slender, sometimes knobbed and uneven; basin narrow, shallow, folded or plaited; calyx rather small; segments divergent. Core regular, closed, not meeting; seeds many, plump; flesh whitish yellow, slightly tinged with red next to the skin, tender, sprightly, brisk, agreeable aromatic subacid, very good. July, September.

English Russet.—Origin unknown; a profitable market variety; tree upright, very productive.

Fruit medium or below, roundish, obscurely conical, very regular;

surface pale greenish yellow, more or less covered with bronze russet, sometimes wholly russeted; cavity narrow, medium, regular; stem medium; basin smooth, medium, regular; calyx small, closed. Flesh yellowish white, firm, crisp, mild subacid, aromatic, fair to good. February to July and may be kept through the summer.



English Russet.

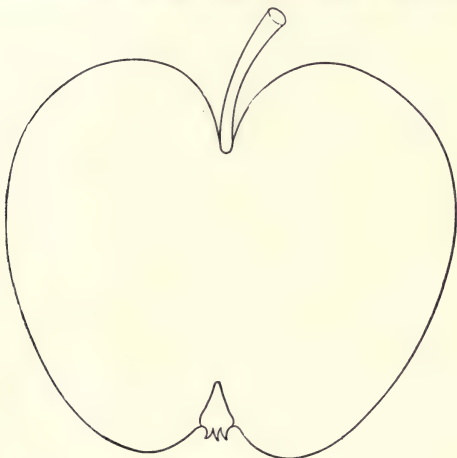
Esopus Spitzenburg—Origin Esopus, on the Hudson River, New York. Fruit considered equal to the Newtown Pippin in quality and unsurpassed as a dessert fruit by any other variety.

Fruit large, regular, oblong, slightly tapering, truncated; surface smooth, almost wholly covered with clear bright nearly solid red, on shaded side yellow, tinged and streaked with red; dots distinct, numerous, small, gray; cavity wavy, deep, wide, light brown; stem medium, slender; basin shallow, smooth or slightly furrowed; calyx small, closed; segments divergent. Core open; cells ovate, slit; tube conical; stamens median; seeds large, light colored, flat; flesh yellow, crisp, firm, juicy, rich, delicious, brisk, spicy subacid, best. November to February.

Estaline.—Originated from seed of Oldenburg about 1878 by O. F. Brand, Faribault, Minn.; tree an early and abundant bearer.

Fruit medium or below, irregular, somewhat angular, roundish,

flattened at ends; surface often with irregular swellings, greenish yellow, handsomely striped with bright red, the red extending over most of the fruit; dots obscure, few, minute, white; cavity narrow, regular, acute; stem medium; basin very abrupt, wavy, moderately



Esopus Spitzenburg.

deep; calyx closed; segments very large, leafy, erect convergent. Flesh juicy, crabby texture, acid, good. Season immediately after Oldenburg.

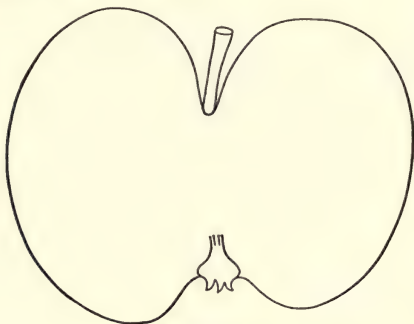
Etris.—A new variety from Benton Co., Arkansas. Prof. J. T. Stinson writes (Ark. Exp. Sta. Bul. 49): "This variety resembles Gano very closely. As far as I am able to judge, there is practically no difference. It also resembles Ragan's Red and Arkansas Belle, both of this county."

Eureka.—Originated in Wisconsin, from seed of Tolman Sweet. This is distinct from the Eureka described by Downing, which is a fall variety of supposed Connecticut origin.

Fruit large, roundish oblate, regular; surface roughened by russet dots and leather-cracking, light yellow, handsomely striped with bright crimson, especially on sunny side; cavity acuminate, regular, slightly

russeted; stem short; basin abrupt, deep, nearly smooth. Core closed; seeds few, flattened; flesh white, fine grained, moderately juicy, sweet, very good. A long winter keeper.

Evening Party.—Origin, Berks Co., Pennsylvania; tree vigorous and productive.



Evening Party.

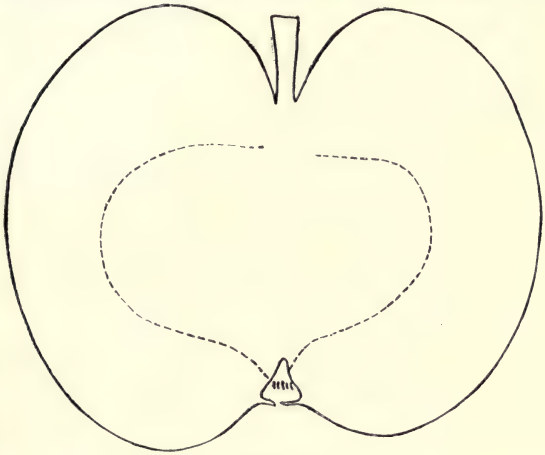
Fruit small to medium, oblate, often unequal, slightly oval; surface smooth, waxen yellow, with dark crimson splashes and stripes, mixed dark red on sunny side; dots many, distinct, gray; cavity deep, acute, wide, regular, often russeted; stem short, slender, green; basin abrupt, smooth, deep, large; calyx small, closed; segments long. Core small, closed, meeting; axis short; flesh yellowish white, fine-grained, tender, juicy, vinous, aromatic subacid, excellent to best. December and January.

Ewalt.—Origin, Bedford Co., Pennsylvania; tree very vigorous, upright, spreading, an early and regular bearer.

Fruit large, roundish, rather angular, with obscure ribs; surface smooth, bright clear yellow, shaded with crimson on sunny side, no stripes; dots greenish, numerous about the base; cavity acute, medium, irregular; stem short, stout; basin abrupt, narrow, deep, plaited; calyx closed. Flesh tender, white, fine-grained, aromatic, brisk subacid, very good. February to April.

Fallowater (*Tulpehocken*).—Origin, Pennsylvania; tree of strong growth and very productive. Very popular in Pennsylvania and Ohio.

Fruit large to very large, round, slightly conical, very regular; surface smooth, yellowish green, shaded with dull red blush on sunny side, often overlaid with whitish net-veinings; dots many, distinct, large, gray with russet centres; cavity regular, narrow, acuminate, slightly russeted; stem short; basin slightly wrinkled, narrow, nearly flat; calyx large, open; segments divergent. Core open, meeting; cells elliptical, slit; tube conical, short; stamens marginal; seeds



Fallawater.

short, plump; flesh greenish white, light, crisp, tender, juicy, pleasant, mild subacid, good only. Early winter.

Fall Harvey.—Origin, Essex Co., Massachusetts.

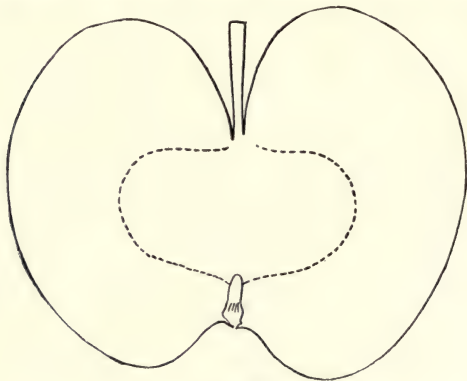
Fruit large, roundish, a little flattened; obscurely ribbed or irregular about the stem; surface pale straw yellow; dots few, scattered, gray, distinct; cavity wide, deep, wavy, green; stem rather slender, medium to long; basin rather shallow, wide corrugated, leather-cracked; calyx small, closed. Core regular, closed, not meeting, seeds medium, pointed, defective; flesh whitish, juicy, crisp with a rich good flavor, good to very good. October and November.

Fall Jenneting.—Origin, Connecticut; tree vigorous, very productive.

Fruit large, oblate, slightly conical, angular, obscurely ribbed; surface smooth, pale greenish yellow, with a blush; dots rare, minute; cavity regular, deep, wide, russeted; stem short; basin shallow, plaited; calyx small, closed; segments divergent. Core small, regular, closed, clasping; seeds many, plump or imperfect; flesh yellowish white, fine-grained, tender, juicy, brisk subacid, good. September, October.

Fall Orange.—Origin, Holden, Massachusetts; tree a strong grower and early bearer.

Fruit medium, roundish, regular; surface a rich yellow with some thin russet net-veinings and patches, sometimes a faint bronze blush;



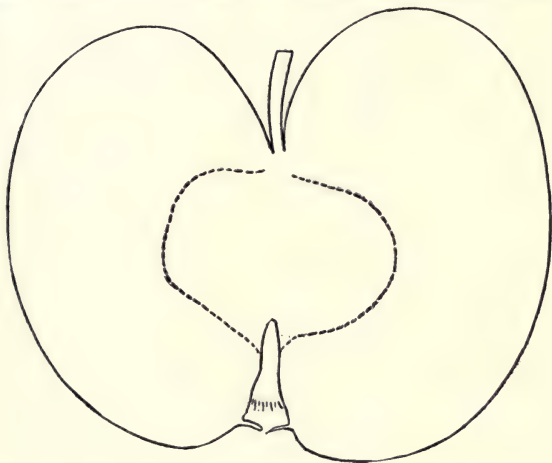
Fall Orange.

dots distinct, numerous, russet; cavity regular, very narrow, acute, with radiating russet; stem short; basin narrow, abrupt, smooth, small; calyx half open; segments divergent. Core closed; cells round, slit; tube funnel-shaped; stamens median; seeds plump; flesh white, tender, juicy, subacid, good. September, October.

Fall Pippin.—Of American origin; the fruit much resembles Holland Pippin, but the latter has a very short stem and obtuse cavity.

Fruit large, round, nearly regular, usually a little flattened, some-

times obscurely ribbed at calyx; surface greenish yellow covered with whitish veinings; dots obscure, numerous, suffused, white; cavity acuminate, wide, deep, slight trace of russet; stem slender, rather long, projecting beyond the fruit; basin shallow, narrow, smooth, regular; calyx closed. Core half open; cells round, slit; tube funnel-shaped,



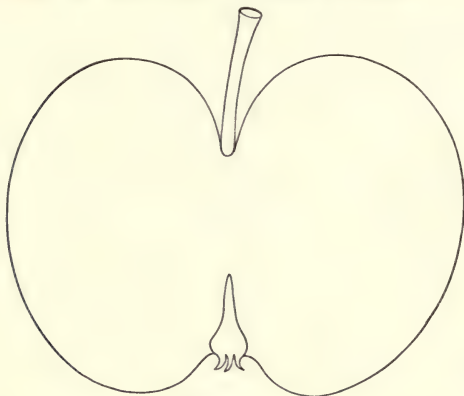
Fall Pippin.

very long, wide, open to core; stamens marginal; seeds short, very plump; flesh juicy, yellow with yellow veinings, pleasant subacid, spicy, very good. October to December.

Fall Wine.—Of American origin; tree of rather slender spreading growth, a moderate annual bearer. Fruit too tender for distant market.

Fruit above medium, oblate; surface very smooth, clear, waxen yellow, almost wholly covered with bright, and often deep red, obscurely striped sometimes with spots or specks, of brownish red, very fair in new rich, Western soils; dots minute, many, russet; cavity deep, wide, regular, uniformly green; stem long, slender; basin wide, deep, abrupt, regular, slightly corrugated; calyx small, half open; segments divergent. Core closed, meeting; seeds many, angular or

plump; flesh yellow, tender, juicy, aromatic, rich very mild subacid, almost sweet, very good to best. September, November.



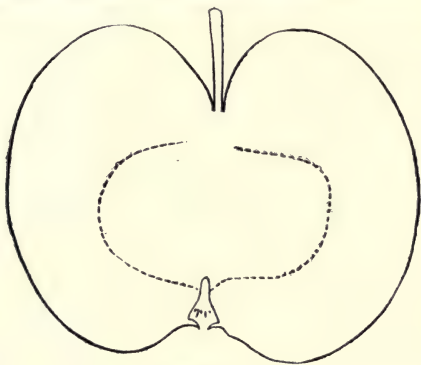
Fall Wine.

Fall Winesap.—A Western variety; origin unknown; tree an early and abundant bearer, tree of strong growth, moderately spreading, somewhat drooping with age.

Fruit medium; form conical; surface yellow with pale blush; dots distinct, numerous, yellowish, large; cavity deep, narrow, regular, acuminate, trace of russet in bottom; stem medium; basin wavy, abrupt; calyx closed; segments erect convergent. Core closed; cells ovate, entire; tube funnel-shaped; stamens marginal; seeds short, plump; flesh yellowish white, juicy, firm, fine-grained, pleasant rich subacid, good. October, December.

Fameuse (Snow).—Origin probably in the French settlements on the St. Lawrence River from seed brought from France between 1600 and 1650. It was first propagated largely from seeds, and although it reproduces itself in this manner quite closely, many have proven sufficiently distinct to be propagated under separate names. The apples of the Fameuse type are discussed by Prof. F. A. Waugh in Vermont Experiment Station Bul. No. 83. Tree moderately vigorous, spreading, round-topped, an early bearer, very productive in alternate years.

Fruit medium, roundish, slightly flattened; surface pale, waxen yellow, almost or wholly covered with fine deep solid red, on shaded side and on specimens protected from the sun the coloring consists of stripes and splashes; dots minute, obscure; cavity narrow, wavy, acute, green; stem short, medium, slender; basin shallow, rather narrow, smooth; calyx small, closed; segments short divergent. Core small, closed, barely clasping; cells ovate, entire; tube funnel-shaped;



Fameuse.

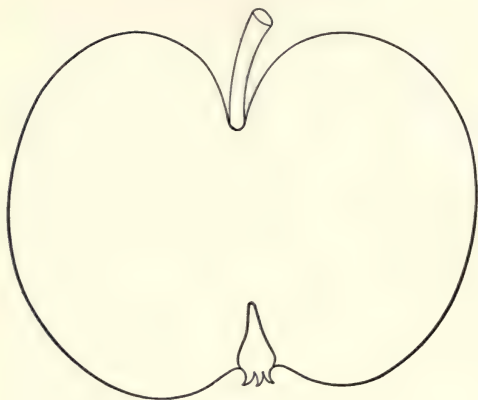
stamens marginal; seeds long, pointed; flesh snow-white, often stained with red, very tender, juicy, fine-grained, perfumed, mild subacid. Very good. October, December.

Family.—Origin, Georgia; tree of fine regular growth and productive.

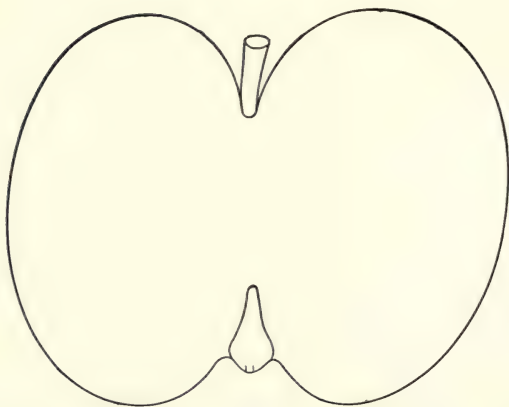
Fruit medium, oblate conical; surface shaded, striped, and splashed with dull red over half or more of its surface; dots numerous, large, light; cavity rather large, slightly russeted; stem short, small; basin medium, slightly wrinkled; calyx closed; segments medium, partially reflexed; flesh, white, tender, juicy, mild, pleasant, subacid, very good. August, September.

Fanny.—Origin, Pennsylvania; tree vigorous, spreading, very productive.

Fruit above medium to large, roundish oblate, slightly conical; surface yellow, almost or wholly covered with deep rich crimson;



Family.



Fanny.

dots few, yellow, obscure; cavity large, deep, rather wide; stem short, slender; basin medium, narrow, nearly smooth; calyx half open; segments short. Core small; flesh white, crisp, tender, slightly stained next skin, juicy, pleasant subacid; very good. August, September.

Farrar (*Robinson Superb*).—Origin, Virginia; tree upright, productive.

Fruit large, flesh crisp, juicy, mild subacid, good. September, October.

Fink.—Origin, on farm of Joseph Fink, Somerset, Ohio; tree of strong, upright growth, a heavy annual bearer.

Fruit small, roundish oblate, regular; surface very smooth, polished, pale greenish yellow with crimson or brownish red blush; dots few, light; cavity medium, very regular, russeted; stem one inch long, moderately stout; basin shallow, broad, corrugated; calyx medium, open; tube long, funnel-shaped; flesh whitish, fine-grained, firm, juicy, mild, aromatic, subacid, good to very good. A remarkably late keeper, remaining sound until the second season or even later.

Flushing Spitzenburg.—Of American origin. The young shoots are strong reddish brown, unlike the slender yellowish shoots of the *Esoopus Spitzenburg*.

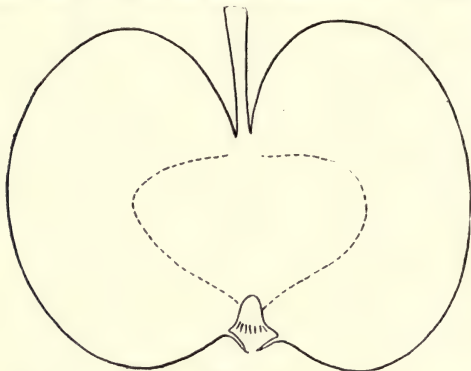
Fruit medium, regular, roundish conical; surface yellow, mostly covered with mixed dark red, overlaid with whitish; dots distinct, numerous, minute, russet; cavity deep, wide, regular, obtuse, some radiating russet; stem medium; basin very shallow, wide, with many small corrugations and ribs; calyx open; segments flat convergent. Core closed; cells round, entire; tube conical; stamens median; seeds plump; flesh white, juicy, pleasant, nearly sweet, good. October to February.

Foundling.—Origin, Groton, Massachusetts; tree moderately vigorous, spreading, productive.

Fruit above medium to large, roundish, slightly flattened at the ends, obscurely conical, somewhat ribbed, angular and uneven; surface yellowish green, shaded, mixed and splashed with rich deep red; dots minute, indented; cavity large, deep, acute, somewhat furrowed and wavy, green; stem short, slender; basin small, abrupt, furrowed; calyx small, closed. Core large, wide, open, clasping; seeds many, small, pointed; flesh yellow, tender, fine-grained, juicy, pleasant, rich aromatic subacid, very good. August, September.

Fulton.—Origin, Fulton Co., Illinois; tree large, vigorous, an annual bearer, productive.

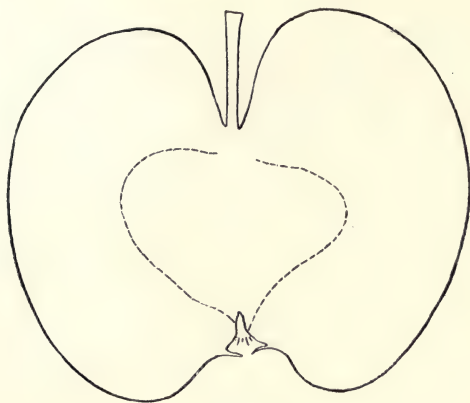
Fruit medium to rather large, regular, oblate truncated, often oblique, surface rich light yellow with handsome deep crimson blush on sunny side, blush overlaid with whitish; dots distinct, numerous, large, gray; cavity deep, wide, obtuse, with radiate russet; stem medium, stout; basin wide, very shallow, smooth or slightly wrinkled; calyx half open; segments small, flat convergent. Core closed,



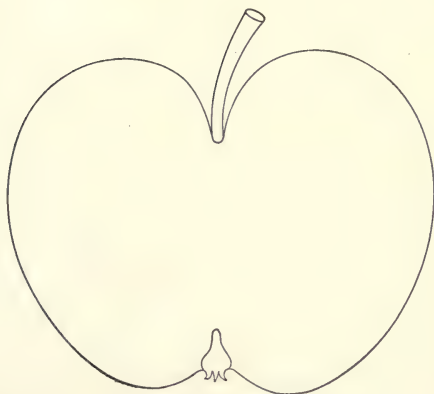
! Fulton.

round, small, clasping, sessile; cells obovate, slit; tube funnel-shaped; stamens median; seeds many, small, plump, short; flesh yellowish, tender, juicy, fine-grained, mild aromatic subacid, almost sweet, very good. November to February.

Gano.—Origin, Missouri; a seedling of Ben Davis, much grown in its native state. It may be described in brief as a solid-colored Ben Davis, the broad dark crimson splashes being lost in the depth of coloring, and is a fruit of very attractive appearance. The Black Ben Davis resembles Gano closely and for a time the two were considered identical. The basin of Gano is nearly smooth and more abrupt; the seeds are larger; the calyx tube is funnel-shaped with usually a long slender stem to the funnel; stamens marginal; cells obovate, nearly entire; flesh like that of Ben Davis, season the same. Many regard Gano somewhat superior to Ben Davis in quality.



Gano.



Garden Royal.

Garden Royal.—Origin, Sudbury, Massachusetts; tree of moderate, very upright growth, forming a beautiful, roundish, even head, very productive.

Fruit medium, or below, roundish oblate, very slightly conical; surface greenish yellow, shaded, striped and splashed with rich red, a little dull or grayish toward the stalk; dots few, light and gray; cavity deep, acute; stem medium, slender; basin shallow, slightly uneven; calyx open or partially closed; segments sometimes a little reflexed. Core small; flesh yellow, very tender, juicy, rich, mild subacid, aromatic, best. Last of August, September.

Garfield.—Origin unknown, probably central or northern Illinois. Size medium to large; shape nearly round, slightly flattened, regular; surface smooth, brilliantly colored, with scarlet and crimson streaks and splashes over a yellow ground; dots numerous, small and gray; basin rather deep, abrupt, regular; eye closed; cavity deep, narrow, slightly waved, russet; stem medium. Core wide, usually open, meeting the eye; seeds plump and numerous; flesh yellowish white, rather coarse-grained, firm; flavor subacid; quality good. Season November to January in Northern Illinois. (H. E. Van Deman.)

Garrettson.—Origin, New Jersey; tree vigorous, upright, spreading, an early and abundant bearer.

Fruit medium, roundish oblate, somewhat conical and angular; surface smooth, pale greenish yellow; dots whitish, distinct, very numerous; cavity rather shallow, acute; stem short, inclined; basin small, abrupt, furrowed; calyx small, closed. Flesh white, crisp, tender, juicy, brisk, pleasant subacid, good, valuable for cooking. July and August.

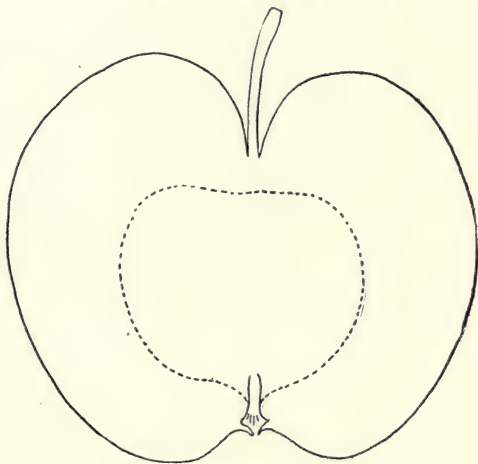
Gideon.—Originated by the late Peter M. Gideon, Excelsior, Minnesota.

Fruit large, roundish oblong conical, regular, slightly ribbed; surface a clear yellowish white with faint bronze blush, an attractive color; dots white, suffused, numerous, minute, distinct; cavity wide, medium deep; stem medium to long; basin wide, shallow, somewhat corrugated; calyx closed. Core large, half open, clasping; cells obovate, slit; tube funnel-shaped; stamens marginal; seeds few, large, flattened, long, pointed; flesh white, juicy, brisk subacid, good. Late fall.

Gilbert (of Minnesota).—The new Minnesota variety under this name is described as Minnesota Gilbert; the apple of Tennessee origin has priority in the name.

Gilbert.—Origin, Tennessee; resembles its "twin-brother" Paragon closely, and by some regarded superior to that variety in size, color, and productiveness; both are considered seedlings of Winesap. The Gilbert of Minnesota is very different (see Minnesota Gilbert).

Fruit large, roundish oblate, unequal; skin thick, tough; surface smooth, yellow, washed with dark red over most of the base and in-



Gideon.

distinctly striped; dots variable, light russet and brown; cavity large, regular, deep, gradual, slightly lipped and lined with gilded russet; stem short, moderately stout; basin large, regular, deep, abrupt, slightly furrowed; calyx large, open; segments short, wide, converging. Core large, conical, clasping, nearly closed; seeds few, large, angular, brown; flesh greenish yellow, moderately coarse, crisp, juicy, subacid, very good. Late winter. (U. S. Agr. Report, 1895.)

Gilpin (*Carthouse, Little Red Romanite*).—An old variety from Virginia, valuable for cider, and good for the table in late spring; tree very productive and vigorous, with a spreading, open, round top.

Fruit rather small to medium, roundish oblong, regular, somewhat cylindrical; surface very smooth, often polished, greenish yellow, almost or wholly covered with deep rich red, obscurely striped and splashed; dots minute, indented; cavity deep, acute, regular, russeted; stem very short; basin wide, rather deep, regular or slightly furrowed; calyx small, closed. Core round, closed; cells round, slit; tube funnel-shaped; stamens median; seeds few, large, pointed, plump; flesh yellow, firm, juicy, crisp, agreeable rich subacid nearly sweet, becomes tender and sprightly late in spring, good. February to May.

Gipsy Girl.—Origin, Russia; one of the hardiest, most vigorous and productive of the Russian apples at Ottawa, Canada, where the fruit keeps till February. A fall apple at Des Moines, Iowa.

Fruit above medium to large, irregular, oblate, angular; surface very highly colored, a clear light waxen yellow, almost wholly covered with bright solid dark crimson on sunny side, on shady side the crimson is thinly marbled and mottled like a water-color painting; dots distinct, few, minute, white; cavity regular, acute, with stellate russet; stem short; basin wide, rather shallow, angular, occasionally abrupt; calyx closed; segments connivent. Core open; cells elliptical, slit, roomy; tube conical; stamens marginal; seeds large; flesh snow-white, slightly stained next to the skin, very tender, breaking, juicy, sprightly acid, good. August.

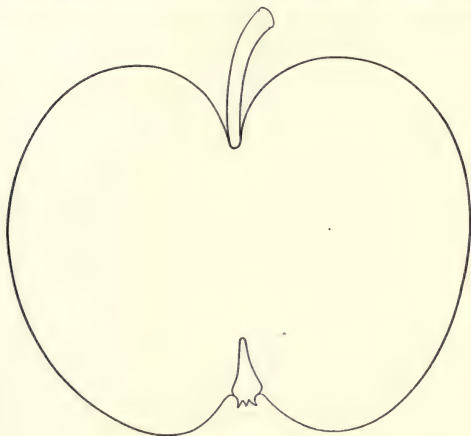
Glass Green.—A Russian variety much resembling Oldenburg and by some thought identical. The Russian Apple Nomenclature Commission placed it in the group of which Oldenburg is the best representative.

Golden Russet (*English Golden Russet*).—An old English variety; tree of strong, spreading, rather irregular growth, forming a bushy head, an early bearer.

Fruit medium, very regular, roundish, slightly conical; surface pale greenish yellow mostly covered with russet; dots distinct, few, gray; cavity regular, obtuse; stem short; basin smooth, medium, leather-cracked; calyx open; segments erect convergent. Core open; cells ovate, entire; tube conical; stamens median; seeds plump, short; flesh firm, rich, spicy, pleasant, mild, slightly subacid, very good. January to May.

Golden Sweet.—Origin, Connecticut; tree very vigorous, spreading, round headed, an early and heavy bearer.

Fruit large, round, very regular; surface very smooth, becoming unctuous, clear, rich, golden yellow; dots green, minute, few, distinct, a few minute russet dots; cavity rather deep, wide, regular, acuminate, with faint trace of russet; stem long, slender at insertion, yellow; basin smooth, shallow, regular; calyx closed; segments divergent. Core open, regular, meeting; cells obovate, entire, abaxile; tube conical; stamens median; seeds numerous, small, pointed, plump, light



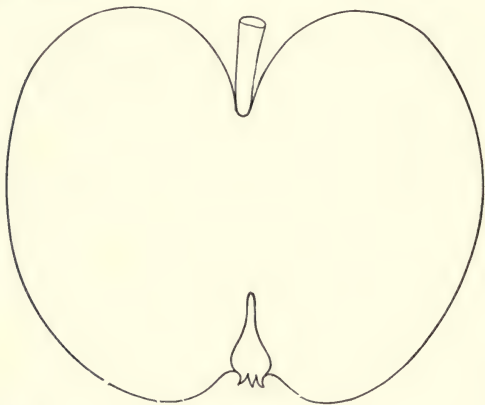
Golden Sweet.

brown; flesh yellow, fine-grained, juicy, rich, aromatic, very good August and September.

Golden White (Nos. 978, 979, 981).—Origin, Russia. This name is not descriptive but was retained for the present by the Russian Nomenclature Commission.

Fruit large, roundish, somewhat tapering, sometimes angular; surface yellow, with dark crimson splashes, mixed and marbled; dots large, grayish white, distinct; cavity shallow, wide, with radiating patch of russet; stem medium; basin shallow, narrow, corrugated; calyx half open. Calyx tube funnel-shaped; stamens median; flesh yellowish white, pleasant subacid, good. Late fall, between Oldenburg and Longfield.

Golding (*American Golden Pippin*).—An old American variety; tree of strong growth with round spreading top, not an early bearer, but very productive with age.



Golding.

Fruit medium to large, roundish oblate, inclining to conic, obscurely ribbed; surface yellow, sometimes a brownish blush in sun, often slightly netted with thin russet; dots few, gray; cavity large, deep; stem short, moderately stout; basin broad, open, slightly corrugated; calyx closed; segments pointed, slightly recurved. Core rather large; flesh yellowish, breaking juicy, rather coarse, rich, aromatic, subacid; very good. November to February.

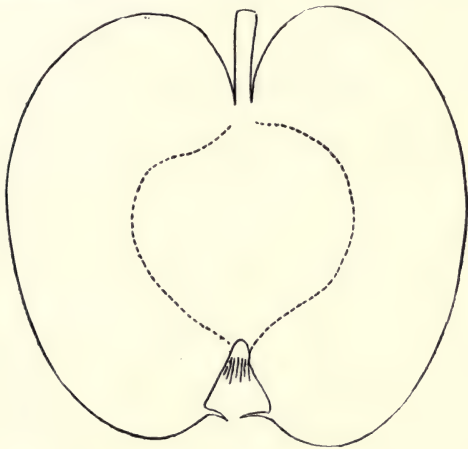
Grandmother (No. 469).—Origin, Russia; the Russian name *Babuscheno* means grandmother.

Fruit medium or above, regular, roundish oblate, somewhat conical; surface green, with dull red cheek, obscurely striped; dots large, numerous, white, some are areolar with whitish bases; cavity very wide and shallow, regular, russet, the russet often extending out in a large irregular patch; stem very short and stout; basin rather narrow and shallow, regular; calyx closed; segments broad, large, erect convergent. Core closed; cells axile, ovate, slit; tube conical; stamens

basal; seeds not many, plump, short; flesh firm, whitish, juicy, sub-acid, good. Early winter.

Gravenstein.—This is considered one of the finest apples of northern Europe, both in appearance and quality. Origin, Gravenstein, in Holstein, Germany.

The original tree is said to have been in existence about the middle of the eighteenth century. Tree very vigorous, spreading, productive bears early.



Gravenstein.

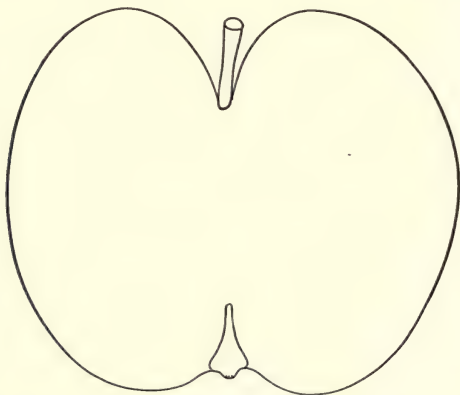
Fruit large, varying from roundish oblong to slightly oblate, angular on the sides, the ribs extending from base to calyx, broadest at the base; surface bright yellow, beautifully striped, splashed, marbled, and dotted with light and deep bright red and orange on sunny side, polished, becoming unctuous at maturity; dots very obscure, few, gray, minute; cavity acute, deep, angular, with trace of stellate russet; stem medium; basin angular, rather irregular, ribbed; calyx closed; segments long, leafy, large, irregular, slightly reflexed. Core open, large; cells roomy, elliptical or round, abaxile; tube conical or funnel-shaped; stamens basal; flesh yellow, with yellow veinings,

tender, juicy, crisp, sprightly subacid, high-flavored, aromatic, excellent. September, October.

Green Cheese.—Origin, Tennessee; an old variety which has been extensively propagated from suckers.

Fruit medium, oblate, occasionally oblique; surface pale greenish yellow, with red on sunny side; dots few, brown; cavity large, deep, russeted; stem short, slender; basin broad, deep, uneven; calyx closed; segments slightly recurved. Core small, compact; flesh yellowish white, tender, delicate, crisp, juicy, rich, sprightly subacid, very good. November to March.

Green Newtown.—Origin, Newtown, Long Island. Downing wrote: "Newtown Pippin stands at the head of all apples, and is, when in



Green Newtown.

perfection, acknowledged to be unrivalled in all the qualities which constitute a high-flavored dessert apple, to which it combines the quality of long keeping without the least shrivelling, retaining its high flavor to the last." One of the highest-priced varieties for the English market. The tree is of rather slow, slender growth, and remarkable even while young for its rough bark. Fruit liable to black spots or scabs unless the trees are given constant cultivation and plenty of manure. A pretty strong, deep, warm soil is necessary for its full per-

fection. It has rarely succeeded well in New England and is tender westward.

Fruit medium, roundish, broadest at the base, next the stem, with two or three obscure ribs extending to the basin, giving it irregularity in outline; surface dull green, becoming olive green or greenish yellow at maturity, with faint reddish brown blush on sunny side; dots small, gray, russet, numerous; cavity wide, deep, funnel-shaped, lined with delicate russet which extends over part of base; stem half an inch long, rather slender, deeply sunk; basin small, narrow, shallow; calyx small, closed; cells obovate, axile; tube conical; stamens median; flesh greenish white, very juicy, firm, crisp, fine-grained, fine aroma and exceedingly high and delicious flavor, best. December to May, but at its best in March. See Yellow Newtown.

Green Sweet.—Fruit medium, roundish oblate, somewhat conic; surface green, sometimes becoming a little yellow at maturity; dots whitish or light russet with green bases; cavity wide, regular, rather deep, covered with russet; stem medium to long, stout; basin shallow, abrupt, somewhat wavy and furrowed. Core closed, regular, meeting; seeds many, angular, long-pointed; flesh whitish, tender, juicy, very sweet, pleasant, good. December to March.

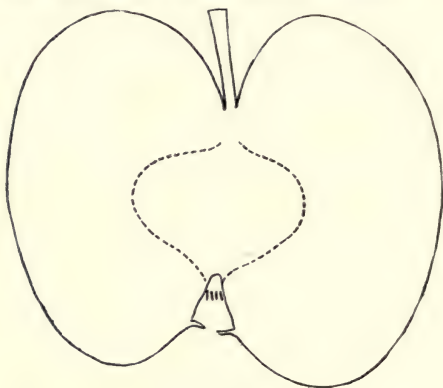
Grimes Golden.—Origin, Brooke Co., Virginia, on the farm of Thomas Grimes; tree vigorous, upright, spreading, a good early annual bearer. In the West this variety and Jonathan are the standard of high quality, nothing better is known.

Fruit above medium, regular, cylindrical, sometimes roundish oblate; surface rich golden yellow, sometimes with thin open net-veining of russet; dots obscure, many, white, minute, with a few russet dots; cavity regular, obtuse, slightly russeted; stem medium; basin deep, abrupt, uneven, somewhat wrinkled; calyx closed or half open; segments divergent. Core small, slightly open, pyriform, meeting; cells obovate; tube conical; stamens basal; seeds many, short, plump; flesh yellow, firm, compact, crisp, aromatic, rich, spicy subacid; quality best. December to March.

Grundy (*Thompson Seedling*, No. 38).—Originated by J. S. B. Thompson, Grundy Co., Iowa; tree productive.

Fruit large, roundish oblong, truncated; surface yellow, mostly covered with dark marbled and mixed red, with grayish net-veining; dots white, minute, obscure; cavity regular, narrow, funnel-shaped,

with radiating patch of russet; stem short, completely filling lower part of funnel; basin deep, abrupt, slightly wavy; calyx wide open. Core closed; tube conical; stamens basal; seeds few; flesh white, tender, juicy, subacid, very good. September, October.



Grimes Golden.

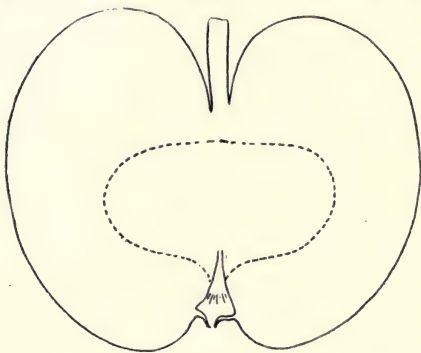
Haas (*Gros Pomier, Fall Queen*).—Origin near St. Louis, Missouri; tree of very strong upright growth, a good early annual bearer.

Fruit medium or above, roundish, oblate, conical, obscurely angular; skin thick, tough, becoming oily; surface yellow, almost or wholly covered with bright crimson, marbled, splashed and striped, a handsome fruit; dots very obscure, few, white, minute; cavity regular, acute, with trace of russet; stem short; basin abrupt, narrow; calyx half open. Core open; cells widely slit; tube funnel-shaped, open to core; stamens median; flesh snow-white, often stained red next to skin, juicy, subacid, with a peculiar quince-like texture; quality fair; use culinary. Late fall.

Hagloe.—Of American origin; an old variety; tree vigorous, round-headed, productive; shoots dark, stout, blunt; foliage large, light green, terminal buds very large.

Fruit medium to large, roundish truncated; surface light yellow with bright red or dark crimson stripes and splashes on sunny side,

covered with white bloom; dots distinct, few, white; cavity regular, rather narrow, with stellate russet; stem short; basin narrow, abrupt, smooth; calyx closed, small; segments erect convergent. Core small; cells round, small, entire; tube funnel-shaped; stamens median;



Haas.

seeds long-pointed; flesh whitish, juicy, tender, acid, good; use kitchen and market only. August.

Hall.—Origin, North Carolina; tree of moderate growth, upright, very productive.

Fruit small, roundish oblate, slightly conical, regular; surface smooth, greenish yellow, mostly covered with bright red and crimson, mixed and striped; dots many, large, yellow and russet; cavity wide, deep, regular; stem long, slender, curved; basin narrow, shallow, wavy, plaited, leather-cracked; calyx small, closed. Core slightly open, clasping; seeds large, plump; flesh yellow, fine-grained, tender, juicy, rich, aromatic subacid, almost best. December to April.

Hamburg.—Originated from seed of Fameuse by S. A. Alling, Homer, Minnesota. Its characteristics indicate that it is a cross of Fameuse with Plumb Cider.

Fruit large, with shape of Plumb Cider and color of Fameuse; form roundish oblong conical; surface smooth, polished, yellow almost or wholly covered with brilliant dark crimson, with obscure splashes and stripes, coloring almost solid on sunny side; dots very

obscure, few, whitish, minute; cavity regular, smooth, acuminate, narrow; stem long, slender; basin very shallow or flat, narrow, faintly wrinkled; calyx closed; segments erect convergent. Core slightly open, clasping, large; tube funnel-shaped; stamens extremely marginal, touching segments (the same as in Plumb Cider); seeds many, angular, short, pointed; flesh white, tender, delicate, juicy, pleasant subacid, much like Fameuse, very good. Early winter.

Heslep.—Originated in Polk Co., Georgia, and is no doubt a seedling of Shockley, which it resembles very much in size, color, productiveness and keeping capacity, but quality is much better. A valuable market variety in Georgia; tree a good grower, a regular and abundant bearer.

Fruit medium, conical; surface yellow, covered with crimson; flesh crisp, juicy, slightly vinous, subacid or rather sweetish. A late keeper. (G. H. Miller, Rome, Georgia.)

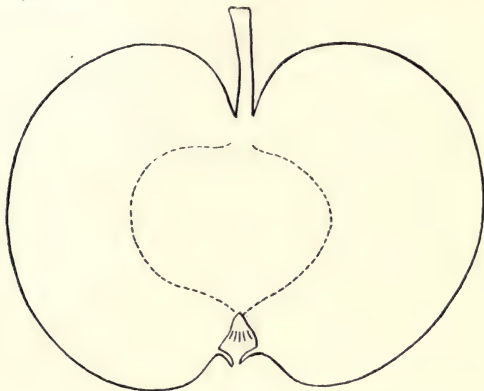
Hewes (for cider only).—Origin, Virginia; very popular in the South for making cider, for which purpose it was thought to be unsurpassed; tree a very heavy bearer.

Fruit about an inch and a half in diameter, round, somewhat flattened, regular; surface yellow, covered with mixed and striped dull purplish red; dots many, large, whitish; cavity deep, regular; stem long, slender, red; basin shallow; calyx small, closed. Core open, clasping; seeds large, pointed; flesh firm, fibrous, yellowish and greenish, juicy, acid, astringent, best for cider, also valued for mincepies on account of the rich acid. November to January.

Hibernal (No. 378).—Origin, Russia. This variety represents what is probably the hardiest type of the Russian race of apples; there are several sorts closely resembling, or identical with, Hibernal; tree vigorous, very spreading, productive. The strong spreading growth makes it desirable as a stock for top-grafting.

Fruit large, irregular, roundish, often oblate, conical, skin thick; surface greenish yellow, with a dull bronze mixed red on sunny side with a few dull crimson splashes; dots white, minute, obscure, often some large russet dots; cavity regular, medium deep, with a large patch of russet radiating out irregularly over nearly the entire base, this is a marked characteristic; stem medium, often short; basin narrow, rather shallow, wrinkled; calyx half open or open. Core closed, meeting; tube funnel-shaped; stamens median; seeds few;

flesh acid with some astringency, juicy, good for cooking. Late fall and early winter.



Hibernal.

Hightop Sweet (*Sweet June*).—Origin, Plymouth, Massachusetts; tree very upright, vigorous, and productive.

Fruit medium, or below, roundish, regular, somewhat truncated; surface very smooth, clear, light yellow, becoming unctuous, some times with faint bronze blush; dots many, obscure, minute, green; cavity regular, acute, deep, with thin stellate russet; stem medium; basin nearly smooth, abrupt, regular, rather shallow; calyx closed; segments erect convergent. Core closed; cells round, entire; calyx tube funnel-shaped; stamens marginal; seeds long, pointed, angular; flesh yellow, with yellow veinings, tender, moderately juicy, very sweet. Very good. June to August.

Hockett.—Origin, North Carolina.

Fruit medium, roundish oblate; surface yellow, shaded, splashed and striped with deep red. Flesh yellowish white, moderately juicy, crisp, rather rich, sweet, good. December to March.

Hoover.—Origin, South Carolina; tree upright, spreading, retaining foliage late.

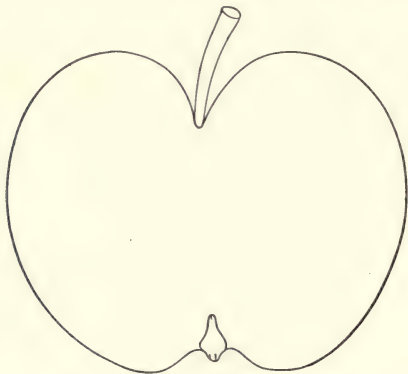
Fruit medium, roundish, sometimes roundish oblate, slightly oblique; surface yellowish, mostly overspread, splashed, and striped

with two shades of red; dots distinct, light, patches of russet; cavity large, thinly russeted; stem rather long; basin slightly furrowed; calyx open. Core small; flesh yellowish, rather firm, tender, juicy, rich subacid, very good. November to February.

Hopewell.—See *Monsees*.

Horn.—Origin unknown; tree vigorous with stout diverging branches.

Fruit medium or below, oblate, unequal; surface whitish yellow, shaded and obscurely striped with light red; dots numerous, small,



Hightop Sweet.

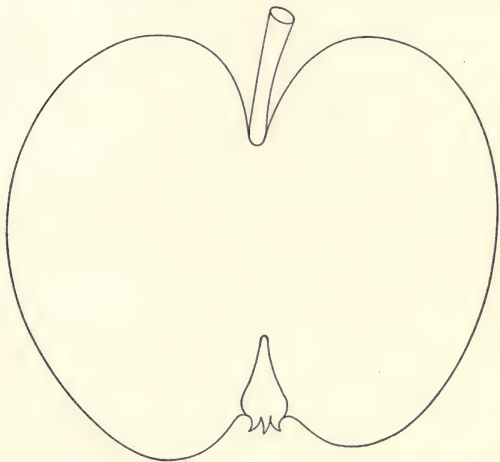
light. Flesh yellowish white, half tender, moderately juicy, mild subacid, good. December to March.

Horse.—Origin, North Carolina; tree vigorous, productive and an early annual bearer. Fruit valued for cooking and drying.

Fruit, large roundish oblate to roundish oval, ribbed, uneven; surface yellow, sometimes shaded with red, with small russet patches; dots few, sunken, large, gray and greenish; cavity deep, acute, wavy, russeted; stem medium to long; basin abrupt, plaited, corrugated; calyx closed. Core large, half open; flesh yellow, firm, coarse, tender pleasant subacid, good. August.

Hubbardston (*Hubbardston Nonsuch*). — Origin, Hubbardston, Massachusetts; tree of strong, spreading growth, very productive.

Fruit large, roundish oblong, conical, regular; surface yellow, covered with orange red and mixed bright brownish-red splashes and small stripes; dots few, gray, distinct; cavity deep, regular, narrow, russeted; stem short, slender; basin abrupt, wide, slightly ribbed and wrinkled, often russeted and leather-cracked; calyx open. Core large, closed, or nearly so, clasping; seeds few, pointed; flesh yellow, tender, juicy, very rich, slightly subacid, mingled with an agreeable sweetness, very good. Early winter.

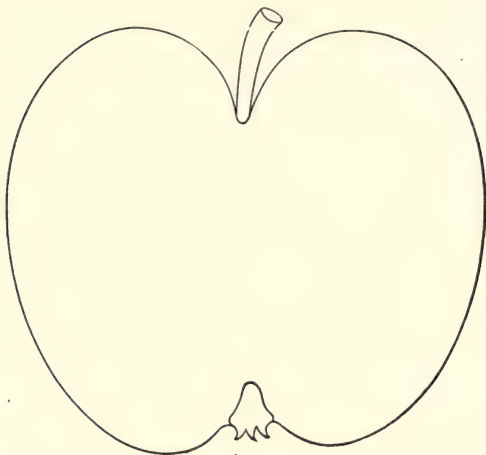


Horse.

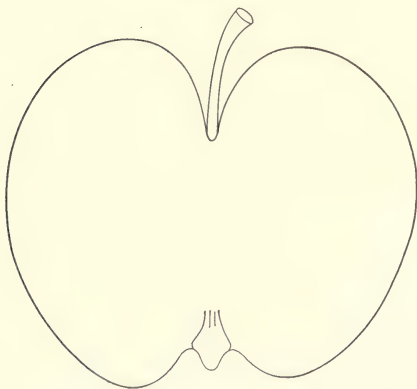
Hunge.—Origin, North Carolina; tree vigorous, very productive; popular in its native state.

Fruit large, roundish, somewhat flattened, irregular and oblique; surface smooth, bright greenish yellow, with delicate blush; dots few, white; cavity wide, wavy; stem short, slender; basin abrupt, rather deep, slightly ribbed; calyx small, closed; segments divergent. Core large, open, clasping; seeds many, angular, plump; flesh white, fine-grained, tender, juicy, mild subacid, good. September, October.

Hunt Russet.—Supposed origin, Concord, Massachusetts; tree of moderate growth, upright, spreading, good annual bearer.



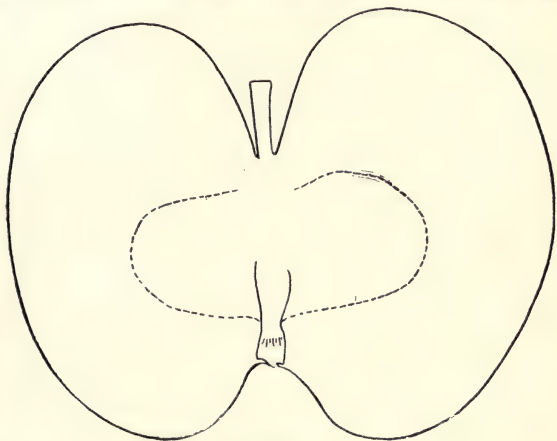
Hubbardston.



Hunt Russet.

Fruit medium, or below, roundish oblate, slightly conical; surface yellow, mostly covered with thin dull russet, with a blush of bright rich red in the sun; dots few, brown; cavity large, deep, acute; stem varying; basin medium, slightly corrugated; calyx partially open; segments medium, a little reflexed. Core compact; flesh yellowish white, fine-grained, tender, juicy, rich, brisk subacid, slightly aromatic, very good to best. January to April.

Huntsman.—Origin, farm of John Huntsman, Fayette, Missouri; tree vigorous, not a very early bearer, but a heavy cropper with age.



Huntsman.

Fruit large, roundish oblate, obscurely angular; surface a clear yellow, with faint bronze blush, an attractive color; dots obscure, numerous, gray, small; cavity regular, wide, very deep, obtuse, green with faint trace of russet; stem short; basin abrupt, medium deep, slightly corrugated; calyx closed; segments connivent. Core half open, sessile; axis short; cells round, abaxile, slit, walls dark; tube broad, funnel-shaped, large, open to core; stamens marginal; seeds plump, rather small; flesh yellow, mild, spicy, sweet subacid, very good. December to March.

Ingram.—Ingram is said to be a seedling of Ralls *Genet* and resem-

bles that variety, but more highly colored; it is said that the seed was planted by Jack Ingram, near Springfield, Mo., in 1844. A heavy regular bearer and long keeper and is becoming very popular in southern Missouri. In common with its parent Ingram blooms later than other varieties.

Fruit medium, regular, roundish conical, flattened; at ends truncated; surface smooth, rich orange yellow, mostly covered with marbled and mixed rich warm bright red with carmine splashes, in part thinly overlaid with whitish; dots very large, numerous, large, yellow and russet; cavity deep, wavy, obtuse, trace of russet; stem short; basin shallow, regular, smooth, sometimes leather-cracked; calyx open; segments divergent. Core closed, small, meeting; cells ovate, axile, widely slit; tube conical, stamens basal; seeds few, flattened, pointed, packed tight in cells, partially covered with cellular exudate; flesh yellow, moderately juicy, firm, crisp, mild rich subacid with sweet after taste, very good. February to June.

Iowa Beauty.—Originated by C. G. Patten, Charles City, Iowa.

Fruit large, roundish truncated, irregular, angular; surface golden yellow, striped, splashed and mixed dark red, a handsome fruit; dots white, minute, obscure; cavity deep, acute, often green; stem short to medium; basin very wide, rather deep, wavy, corrugated and wrinkled; calyx closed. Core clasping, half open; tube conical; stamens median; flesh rich yellow, firm, juicy, acid, good. Fall.

Iowa Blush.—Distributed from Iowa City, Iowa.; supposed to be an unknown stray from Ohio. Tree very productive, a strong grower in nursery and orchard; under the bark of young thrifty trees are hard, detached warty excrescences.

Fruit small, roundish conical; surface smooth, yellow with bright mottled red blush, or washed with bronze on sunny side; dots obscure, numerous, minute, white, many large areolar dots; cavity regular, acuminate, narrow; stem medium; basin rather shallow, narrow, abrupt, with fine corrugations; calyx prominent, closed; segments erect convergent. Core closed, clasping; cells obovate; tube funnel shaped; stamens median; seeds many, plump, pointed ovate, nearly black, packed tightly in cells; flesh white, juicy, mild subacid, good—Early winter.

Irish Peach.—Origin unknown.

Fruit medium, roundish, somewhat flattened, slightly angular surface smooth, pale yellowish green, on shaded side tinged with dull

reddish brown with fine lively red in the sun; dots on shaded side numerous, green; on sunny side yellow; cavity rather deep; stem short, thick, fleshy; basin rather deep, knobbed; calyx small, closed; Core open; cells obovate, axile; tube conical or funnel-shaped, stamens marginal or median; flesh greenish white, crisp, tender, very juicy, vinous, aromatic, good. August.

Isham Sweet.—Origin, Wisconsin.

Fruit medium, roundish, slightly tapering; surface yellowish green, mostly covered with brownish red, solid and mixed on sunny side, striped and broadly splashed on shady side; dots distinct, russet, numerous, minute, a few large russet dots; cavity regular, acute, with much radiating russet; stem short, basin very shallow, minutely wrinkled; calyx open; segments flat convergent. Core closed; cells round, entire; tube funnel-shaped; stamens median; seeds long, large, flat; flesh very yellow with yellow veinings, firm, very sweet, quality very good. Late fall, early winter.

Jacobs Sweet.—Origin, Medford, Massachusetts; resembles Sweet Bough in habit of growth, in texture and feeling of skin, but has more blush and is a late keeper.

Fruit large to very large, round oblate, somewhat conical; surface yellow, with red or brownish-red blush, often much russeted; dots white, large, distinct; cavity large, wide; stem medium; basin deep, smooth; calyx open. Core small, closed; tube conical; flesh white, firm, very rich, juicy, sweet. Excellent for table or baking. October to March.

Jefferis.—Origin, Chester Co., Pennsylvania; tree a moderate grower, productive.

Fruit medium or rather large, roundish oblate, very regular; surface clear waxen yellow, handsomely shaded, striped and splashed dark crimson; dots numerous, large, whitish; cavity rather large, regular, acuminate with slight trace of russet; stem medium to long; basin wide; smooth, abrupt, medium deep; calyx closed; segments flat convergent, large, leafy. Core small, closed, clasping; cells obovate, slit; tube funnel-shaped; stamens median; seeds numerous, long-pointed; flesh yellowish white, very juicy, tender, aromatic, mild subacid, very good. September, October.

Jersey Sweet.—Origin unknown; tree vigorous, round-headed, very productive. An excellent baking sweet apple for early September.

Fruit medium, roundish ovate, somewhat conical; surface smooth, yellow, nearly covered with mixed red, striped and splashed with darker red; dots mostly minute, with some large russet dots; cavity acute, regular, or wavy, rather deep, brown; stem medium to long; basin narrow, nearly flat, wrinkled; calyx closed, small. Core half open, tube funnel-shaped; stamens marginal; seeds numerous, wide, pointed, plump; flesh whitish, tender, fine-grained, very juicy, aromatic rich, very sweet, very good. Begins to ripen last of August and continues till frost.

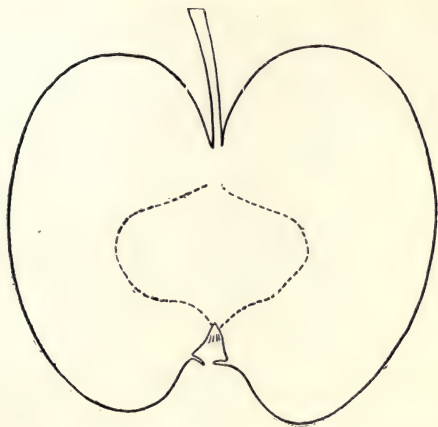
Jewett Red (*Nodhead*).—Origin, New Hampshire.

Fruit medium, roundish oblate, conical, irregular; surface greenish white, striped, splashed and shaded with bright red and crimson, with a thin dull grayish bloom; dots many, very distinct, white; cavity broad, deep, acuminate, green; stem short; basin exceedingly small, irregular, shallow; calyx firmly closed. Flesh tender, juicy, very pleasant, sprightly, almost sweet, good to very good. November to February.

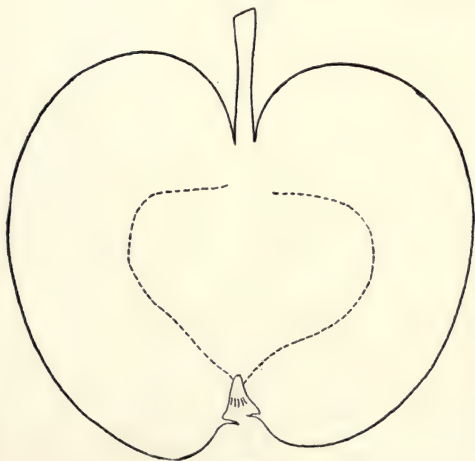
Jonathan.—Origin, Kingston, New York; this and Grimes *Golden* are considered the two best varieties for dessert use in the West. Jonathan is evidently of the Spitzenburg type and by some is considered to be a seedling of that variety. For best results should not be grown alone but intermingled with other varieties for proper pollination of the blossoms; tree of moderate vigor, forming an upright, spreading; round head; shoots rather slender, drooping; foliage rather sparse, grayish.

Fruit medium, roundish oblong, somewhat conical, truncated, regular; surface very smooth, clear light yellow, almost or wholly covered with solid brilliant dark red on sunny side, on shaded side mixed and striped with lighter red; dots distinct, many, minute, whitish; cavity acute, deep, regular, with stellate russet; stem long, slender; basin deep, smooth, very abrupt, rather wide; calyx small, closed; segments connivent. Core closed, scarcely clasping; cells obovate; tube conical; stamens median or basal; seeds plump, long, pointed; flesh white, very tender and juicy, spicy, aromatic, sprightly subacid, quality best. December to March East, late fall and early winter in the South.

Top-grafting Jonathan on stronger growing varieties to overcome its slender growth is often practised; a grower in Iowa found Haas especially well adapted for this purpose.



Jonathan.

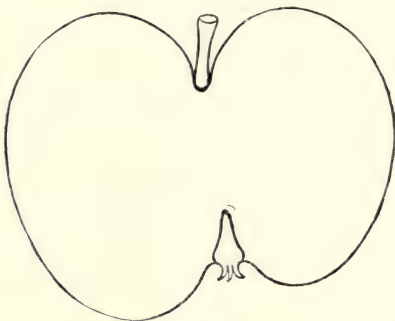


Judson.

Judson (*Thompson's Seedling* No. 29).—Originated in Grundy County, northern Iowa, by J. S. B. Thompson. In fall of 1861 Mrs. Thompson saved the seed in her father's orchard of seedlings in New York.

Fruit large, roundish oblong, conical, regular; surface greenish yellow, mostly covered with dark red with crimson stripes and splashes on sunny side; dots distinct, white, few, small; cavity regular, medium deep, slightly acuminate with much stellate russet; stem long; basin shallow, narrow, abrupt, ribbed and minutely wrinkled; calyx half open; segments erect convergent. Core half open; cells ovate, slit; tube conical; stamens median; seeds few, short, plump, some imperfect; flesh white, subacid, good. Winter. (See *Grundy*.)

Julian.—Origin, North Carolina; tree moderately vigorous, very productive.



Julian.

Fruit above medium, roundish, inclining to conic, unequal; surface waxy, whitish, striped, splashed, and mottled with rich red; dots few, light, some having dark centres; cavity deep, sometimes russeted; stem short, small; basin deep, slightly corrugated; calyx small, closed; segments long, slender, slightly reflexed. Flesh yellowish white, tender, juicy, pleasant subacid, good to very good. July and August.

July, Fourth of.—Origin, Germany; tree of strong, upright growth, forming a fine head; a fruit closely resembling Tetofsky but very distinct in tree; an early and abundant bearer.

Fruit medium, roundish, oblate, conical, slightly ribbed; surface whitish yellow, covered with a thin whitish bloom, and striped and

splashed with bright red; dots large, light; cavity medium, regular; stem rather short and slender, often with bracts; basin small, slightly uneven; calyx closed; segments rather long, generally reflexed. Core small; flesh white; juicy, sprightly, brisk subacid, good. July.

Junaluskee.—Origin, North Carolina; tree moderately vigorous, spreading.

Fruit medium to large, regular, roundish oblate, slightly conical; surface yellow, with some russet, lightly shaded on sunny side; dots few, minute, brown and gray; cavity large, deep, acute, with a little green russet; stem short, knobby; basin rather small, abrupt, nearly smooth; calyx small, closed. Core wide, regular, heart-shaped, small, closed; axis short; flesh yellowish, rather compact, moderately juicy, rich, spicy subacid, good to very good. November to March.

Kaump (*Harry Kaump*).—Origin, Wisconsin; tree very productive, and doing well in northern Iowa; now on trial list of Minnesota State Horticultural Society.

Fruit small, roundish, regular; surface yellowish green, sometimes with dull brown cheek; dots white, distinct, a few with russet centres; cavity acute, regular, with radiating patch of russet; stem medium; basin narrow, small, smooth, abrupt; calyx half open. Core open; tube funnel-shaped; stamens median or basal; seeds few, large, plump; flesh white, fine-grained, subacid, good. Winter.

Kent Beauty.—Of English origin; tree of strong upright growth, a moderate bearer. One of the most handsomely colored apples, but of little value except for cooking.

Fruit very large, roundish, flattened at base, tapering toward the calyx; surface smooth, greenish yellow, with faint red patches on shaded side, on sunny side entirely covered with large rich purplish-red stripes with a few deep yellow patches; cavity wide, deep, acuminate, corrugated, with large patch of russetting extending out over the base; stem slender, short; basin narrow, angular, deep; calyx small, closed; segments short, erect convergent. Cells roundish obovate, abaxile; tube deep, conical; stamens median; flesh juicy, tender, crisp, pleasant subacid, fair. October to November.

Kernodle.—Origin, North Carolina.

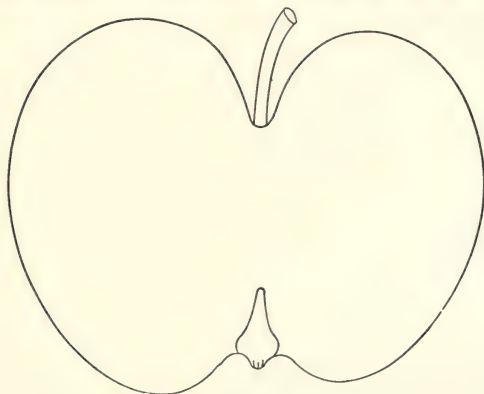
Fruit medium, roundish; surface moderately smooth with russet patches, yellow, washed with mixed red, splashed and striped with crimson; dots numerous, yellow, slightly indented; cavity regular, large, deep, gradual, russet; stem medium, slender; basin regular,

medium, furrows, and leather-cracking; calyx small, partially closed; segments small, converging. Core large, roundish, clasping; seeds numerous, medium, brown, plump; flesh yellowish, medium, fine, breaking, juicy, subacid, slightly astringent, good to very good. Winter. (U. S. Div. of Pomology, 1902.)

Keswick (*Keswick Codlin*).—Of English origin; tree vigorous, very productive, and an early bearer. Excellent for culinary use as it cooks well even when half-grown.

Fruit rather large, somewhat conical, angular, obscurely ribbed; surface pale greenish yellow on shaded side, on sunny side deeper yellow with faint blush; cavity deep, russeted; stem short, downy; basin rather deep, somewhat corrugated; calyx closed; segments long, narrow, connivent; cells ovate lanceolate, abaxile; tube conical; stamens median; flesh pale yellowish white, very juicy, tender, brisk, pleasant acid, good for cooking. September and October, but may be used as early as August.

Kinnard (*Kinnard's Choice*).—Originated on farm of the late Michael Kinnard, of Franklin, Tenn.; tree vigorous, not very upright,



Kinnard.

an early and annual bearer, producing heavier crop alternate years.

Fruit medium, oblate, inclining to conic, slightly angular, or

obscurely ribbed, sides sometimes unequal; surface yellow, almost covered with dark rich red; dots near basin many, small, light, near base larger and fewer; cavity wide, deep, russeted; stem short, small, sometimes by a lip; basin large, deep, furrowed; calyx closed. Core small; tube obtusely conical; flesh yellowish, half fine, crisp, tender, juicy, mild rich subacid, slightly aromatic, very good. January.

Kirkbridge.—Of American origin; tree of slow, upright growth, an early and heavy bearer.

Fruit small to medium, oblong conic, broadly ribbed, sometimes inclined and unequal, very irregular; surface smooth, yellowish white; dots few, very minute, obscure, suffused, whitish; cavity narrow, acute, regular, with irregular russet patch; stem long, slender, green; basin narrow, abrupt, slightly corrugated; calyx small, closed, segments long-pointed, erect convergent. Core rather large, open, meeting; cells elliptical, slit; tube conical; stamens basal; seeds numerous, very plump, blunt; flesh white, very tender, fine-grained, juicy, pleasant subacid, too tender for distant shipment, very good. August and September.

Krauser.—Origin, Berks Co., Pennsylvania; tree large, vigorous, spreading, very productive.

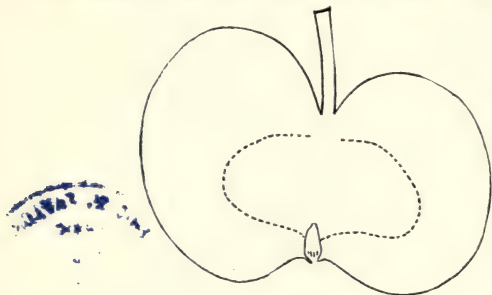
Fruit medium, roundish conic; surface whitish yellow, much striped and splashed with bright red and dark crimson; cavity medium; stem rather short; basin small, corrugated; flesh white, tender, mild, subacid, good to very good. December, March.

Lacon.—Originated with E. R. McKinney, Lacon, Illinois; tree vigorous, forming a round compact head, productive.

Fruit medium, irregular, oblate, unequal; surface smooth, yellow and green, slight bronze blush with russet patches; dots very distinct, numerous, green, large, some with russet centres; cavity narrow, acute, green, with trace of russet; stem stout, short; basin wavy, minutely wrinkled, abrupt medium; segments divergent, long, leafy. Core open; cells ovate, abaxile, slit; tube conical; stamens median; seeds short, plump, pointed; flesh yellow, firm, fine-grained, juicy, mild subacid, pleasant, good. October to January in northern Illinois.

Lady.—A very old French variety, known abroad by the name of Api; a fancy little dessert apple noted for its beautiful color and excellent quality.

Fruit quite small, regular, sometimes unequal, flattened; surface smooth, polished, pale yellow with brilliant deep red, approaching to crimson on sunny side; dots obscure, numerous, white, minute; cavity wide, deep, regular, obtuse, with green rays and stellate russet; stem medium to long; basin wide, shallow, slightly corrugated; calyx



[Lady.

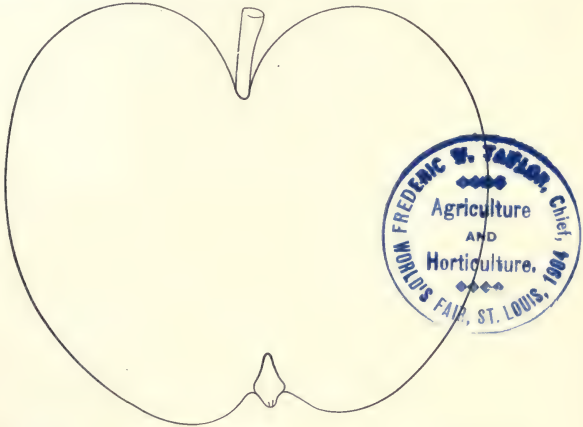
closed; segments divergent. Core closed; cells obovate, axile, slit; tube conical; stamens marginal; seeds plump, short, numerous; flesh white, crisp, tender, very juicy, sweet, slightly perfumed, excellent. December to May.

Lady Sweet.—Origin, New York. Downing considered this variety, which originated in his neighborhood, Newburgh, N. Y., one of the finest winter-sweet apples for the dessert, yet known or cultivated in this country, and describes it fully as follows:

“Fruit large, roundish ovate, narrowing pretty rapidly to the eye; surface very smooth, nearly covered with red in the sun, but pale yellowish green in the shade, with broken stripes of pale red; red sprinkled with well-marked yellowish gray dots, and covered, when first gathered, with a thin white bloom; on shaded side there is generally a faint marbling of cloudy white over the red, and rays of same around the stalk; cavity shallow; stem half an inch long; basin shallow, plaited, narrow; calyx quite small; flesh greenish white, exceedingly tender, juicy, and crisp, with a delicious, sprightly, agreeable perfumed flavor, very good to best; keep without shriveling or losing its flavor till May.”

Lankford.—Origin, Lankford, Maryland; tree vigorous, productive.

Fruit medium, oblate to roundish oblate, sides sometimes unequal or a little oblique, often flattened at the ends; surface pale green, shaded with pale and dark red over half or more of its surface; dots few, large, light and grayish—many areole; cavity large, deep, greenish; stem rather short, slender; basin large, rather deep, slightly corrugated; calyx closed or partially open. Core small; flesh whitish,



Lady Sweet.

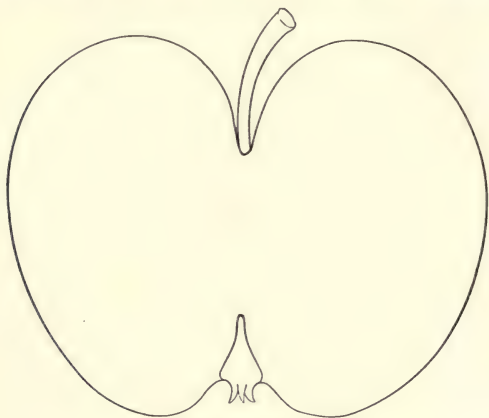
a little coarse, tender, moderately juicy, mild subacid, inclining to sweet. December, May.

Lansingburg.—Origin, New York; tree upright, spreading, vigorous, thorny, a fair bearer.

Fruit medium, roundish oblate, conical, angular, oblique, often unequal; surface smooth, green and yellow, with bronze blush, mostly covered with grayish red; dots minute, gray, with green bases; cavity acute, uneven, russeted; stem short; basin deep, corrugated; calyx closed. Core closed; seeds many, large; flesh firm, mild subacid, fair to good. Late winter and spring.

Late Strawberry (Autumn Strawberry).—Origin, Aurora, New York; tree vigorous, upright, spreading, productive, an early bearer.

Fruit medium, regular, roundish, slightly conical, sometimes obscurely ribbed, truncated; surface polished, yellowish white, almost wholly covered with light and dark splashes and crimson and red, often overlaid with thin bloom, a showy fruit; cavity large, deep, acute, with thin stellate russet; stem long, slender, curved; basin abrupt, narrow, wavy, ribbed; calyx half open; segments erect convergent. Core closed; cells obovate, entire; tube funnel-shaped,



Late Strawberry.

narrow, open to core; stamens marginal; seeds very large, roundish, flattened; flesh yellowish white, tender, juicy, pleasant, vinous, subacid, very good. October, December.

Lawver.—Origin uncertain, introduced by Geo. S. Park, of Parkville, Missouri; tree spreading, an early and annual bearer.

Fruit above medium, roundish oblate, irregular, broadly ribbed; surface polished, greenish yellow, almost wholly covered with dark bright red, with obscure dark crimson splashes; dots few, yellow and russet, minute; cavity deep, regular, with radiate russet; stem medium to long, slender; basin nearly flat, narrow, wrinkled; calyx closed; segments connivent. Core small, half open, outline indistinct; cells round, slit; tube funnel-shaped; stamens marginal; flesh firm, yel-

lowish white, juicy, tender, pleasant subacid, good. Late winter to May or later.

Lehigh Greening.—Origin, Pennsylvania.

Fruit very large, roundish; surface moderately smooth with leather-cracking and erupted dots; skin thick, tenacious; color greenish yellow, with bronze blush on exposed side; dots numerous, variable, russet; cavity large, regular, deep, russeted; stem medium; basin large, regular, deep, furrowed and leather-cracked; calyx medium, partially reflexed; eye large, partially open. Core medium, oval, clasping; seeds few, medium, plump, brown; flesh yellow, medium fine, breaking, juicy; flavor sprightly subacid; quality good to very good. Winter. (U. S. Div. of Pomology.)

Lilly of Kent.—Origin, Delaware.

Fruit large, globular truncate, surface smooth; color green, with shades of yellow and bronze; dots few, light and brown; cavity regular, medium, deep; stem short, stout; basin irregular, medium, slightly furrowed and folded; calyx long, stout, straight; eye large, open. Core large, roundish, clasping; seeds few, large, plump, light brown; flesh greenish yellow, fine-grained, juicy; flavor mild subacid; quality very good. Late winter. (U. S. Div. of Pomology.)

Limbertwig.—Supposed origin, North Carolina; tree thrifty, very productive, roundish, spreading, the slender shoots drooping with the heavy crop.

Fruit rather small to medium, roundish oblate, somewhat conical, regular; surface yellowish green covered with dull red, with obscure darker stripes; dots many, large, light brown, irregular; cavity broad, deep, acute, green and russet; stem medium; basin small, shallow, uneven; calyx small, half open. Core closed; seeds many, small, plump, long; flesh greenish yellow, very firm, juicy, brisk, rich, aromatic subacid, good. Late winter and spring.

Long Arcade.—A Russian variety, doing well in Minnesota and the Northwest; the name is not descriptive as to shape, but was retained by the Russian Nomenclature Commission; tree very upright, spreading with age.

Fruit medium, oblate, slightly angular; surface greenish yellow, nearly covered with dark red, no distinct stripes or splashes; dots minute, numerous, white, obscure; cavity regular, medium deep, broad, acute, with good-sized radiating patch of russet; stem long, slender; basin wide, very shallow, wrinkled; calyx open. Core closed;

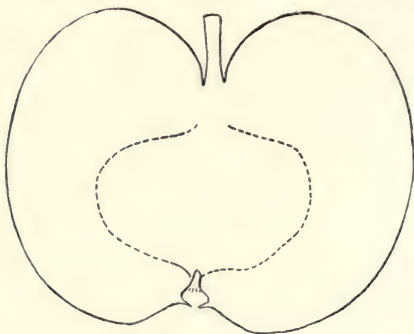
tube conical; stamens marginal; seeds short, plump; flesh white, tender, juicy, mild subacid, with sweet after-taste, very good. August to September.

Longfield.—Origin, Russia; tree of moderate, spreading, pendulous growth; an early and very heavy annual bearer.

Fruit medium, roundish conical, unequal, often obscurely angular; surface smooth, polished, clear waxen yellow, with a lively red blush; dots distinct, few, large, yellowish; cavity regular, deep, narrow, acuminate, with stellate russet; stem short; basin narrow, abrupt, wrinkled; calyx half open; segments large, divergent. Core closed, clasping; cells ovate, entire; tube funnel-shaped, long; stamens median; seeds few, large, long, plump, pointed; flesh very white, very tender and juicy, pleasant, brisk, subacid, good. October, November.

Lord (*Lord's Longfield*).—Originated from seed of Wealthy by O. M. Lord, Minnesota City, Minnesota, and named at first from its resemblance to Longfield, but later fruits show much color.

Fruit medium, roundish, somewhat conical, regular; surface greenish, mostly or wholly covered with rosy crimson, a handsome



Louise.

fruit; dots minute, white; cavity deep, narrow, acute, with radiating patch of yellow; stem long; basin narrow, regular, abrupt, with fine wrinkles; calyx half open. Core closed, meeting; tube conical; stamens median; flesh white, stained next to skin, firm, mild, pleas-

ant vinous subacid, with sweet after-taste, very good. September to November.

Louise, Princess.—Originated near Grimsby, Ontario, on the farm of L. Woolverton, probably from seed of Fameuse.

Fruit medium, roundish oblate, regular, obscurely angular; surface greenish yellow, almost or wholly covered with a fine solid dark red with obscure splashes of darker red, sometimes with thin open net-work of russet; dots obscure, numerous, minute, whitish; cavity wide, obtuse, regular, green; stem medium, slender; basin smooth, rather shallow; calyx closed; segments connivent. Core half open; cells round, entire; tube funnel-shaped; stamens median; seeds few, short, plump; flesh tender, juicy, snow-white, fine-grained, pleasant, aromatic subacid (Fameuse type), very good. October to December.

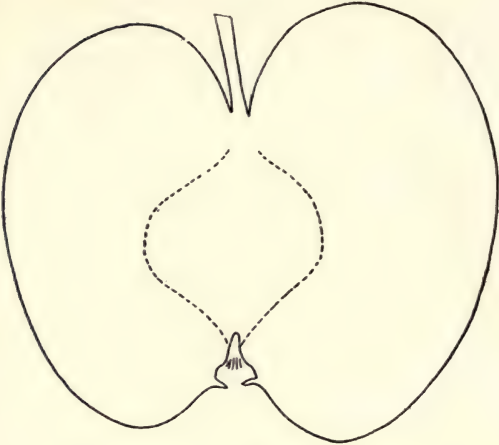
Lowe.—Originated in an old Dutch settlement in the eastern part of Guilford Co., North Carolina. The name is sometimes spelled Lough. A large early apple, very good to best in quality; mentioned in Bul. 8, Div. of Pomology.

Lowell.—Origin unknown; tree vigorous, spreading, productive, the oily skin gives it the name of Tallow Apple or Greasy Pippin in some localities.

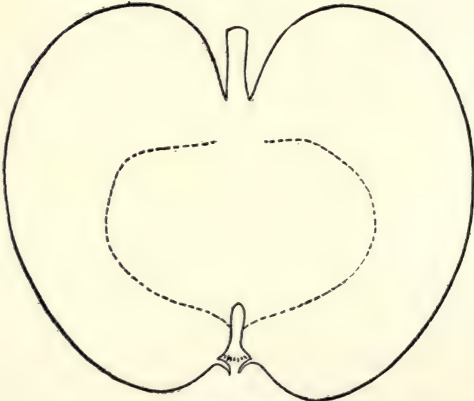
Fruit large, roundish oblong, nearly regular, truncated, slightly conical; surface rich bright, waxen yellow, very unctuous at maturity; dots distinct, numerous, minute, white; cavity deep, uneven, acute with trace of stellate russet; stem short; basin abrupt, deep, furrowed; calyx closed; segments connivent. Core closed; cells elliptical, slit; tube funnel-shaped; stamens basal; seeds few; flesh yellowish white, pleasant, brisk rather acid flavor, good to very good. September, October.

Lowland Raspberry (*No. 340, Lievland Raspberry*).—Origin, Russia; tree medium, upright, round-topped. A. G. Tuttle of Baraboo, Wis., from his experience with many Russian apples says: "There is no early apple East or West of better quality than Lowland Raspberry. The tree is perfect and a good bearer, and the fruit is handsomely colored."

Fruit medium to large, round conic, regular; surface smooth, polished, clear waxen white, striped, splashed, shaded and marbled with fine light crimson, a beautiful fruit; dots minute, greenish, obscure; cavity narrow, acute; stem medium to long; basin small,



Lowell.



Lowland Raspberry.

smooth, or slightly wrinkled; calyx small, closed, or half open. Core large, clasping, open; cells very large, abaxile, roomy, ovate, entire; tube wide, long, funnel-shaped; stamens marginal; seeds many, rather small, brown black; flesh white, often stained with red, very tender, fine-grained, crisp, juicy, very pleasant, mild subacid, almost sweet, excellent. August, as early as Yellow Transparent.

Lubsk Queen (*Lubsk Reinette*, No. 444).—Origin, Russia. A fruit of remarkable beauty, always attracting much attention wherever exhibited; tree vigorous, medium, upright.

Fruit medium to large, regular, round, truncated; surface very smooth, polished and wax-like, a brilliant white, more or less covered with solid light rosy red, with delicate white bloom, a self-colored apple, but sometimes with short red splashes on lighter ground; dots white, minute, numerous; cavity rather small, acute, slightly russeted; stem medium to long; basin wide, shallow, regular, with generally five fine corrugations around the eye; calyx closed; segments long, pointed. Core closed; cells ovate, slit; tube long, funnel-shaped; stamens marginal; seeds not many, plump; flesh snow-white, firm, juicy, fine-grained, subacid, good. August, September.

McAfee (*McAfee Red*).—Originated at McAfee's old fort, Kentucky; tree a good grower and very productive.

Fruit large, roundish, slightly oblate; surface polished, greenish yellow, almost wholly, but thinly, covered with fine solid crimson, obscurely striped and covered with a thin bloom; dots distinct, numerous, minute, white; cavity regular, green, obtuse; stem short, fleshy; basin smooth, very narrow, shallow; calyx closed; segments connivent. Core open; cells ovate, entire, abaxile; tube conical; stamens median; seeds small, plump; flesh juicy, white, fine-grained, lively subacid, very good. November to March.

McCuller.—Origin, North Carolina.

Fruit medium, oblate; skin medium thick, brittle; surface smooth, glossy, greenish white, washed and splashed with purplish red, heavily overspread with gray whitish bloom; dots small, russet; cavity regular, medium, gradual, russet net-work; stem very short, stout; basin regular, small, shallow, furrowed and bloom; calyx small, closed; segments small, converging, reflexed at tips. Core oblate, clasping, large; seeds few, medium, plump, brown; flesh whitish, fine, breaking, juicy, subacid, good. Winter. (U. S. Dept. Agr., 1902.)

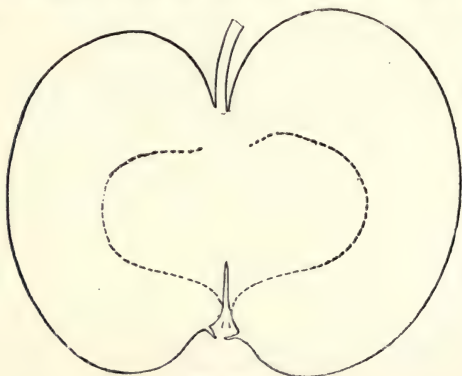
McIntosh (*McIntosh Red*).—A choice variety of the Fameuse

type; origin, Ontario, Canada; tree vigorous, with spreading head; a good annual bearer.

Fruit above medium to large, roundish oblate to roundish truncated, slightly irregular, and obscurely angular, highly perfumed; surface very smooth, polished, yellow, almost wholly covered with brilliant solid crimson, the coloring brighter on shaded side, with heavy blue bloom, a beautiful fruit; dots many, obscure, minute, white; cavity obtuse, wide, regular, with a trace of russet; stem short to medium stout; basin smooth, rather shallow, abrupt; calyx closed; segments connivent. Core closed; cells ovate, entire; tube funnel-shaped; stamens marginal or median; seeds plump; flesh snow-white, crisp, very tender, juicy, sprightly, aromatic subacid, very good. December to January.

McLellan.—Origin, Woodstock, Connecticut; tree a thrifty upright grower, very productive, an annual bearer.

Fruit medium or above, regular, roundish oblate, regular, sometimes unequal; surface yellow, mostly covered with dark crimson, marbled, splashed, and striped, solid on sunny side; dots distinct,

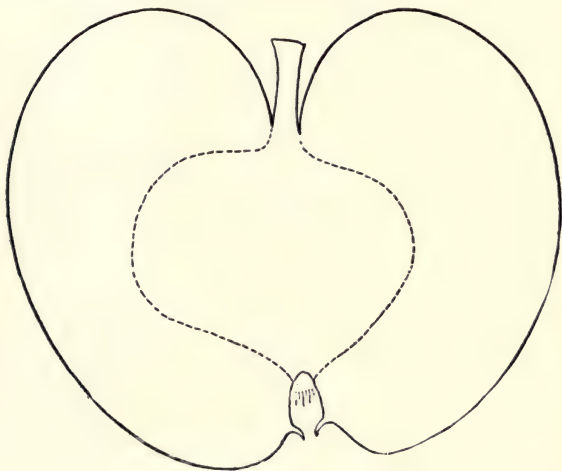


McLellan.

numerous, raised russet, small; cavity rather deep, regular, wide, obtuse; stem medium, rather slender; basin smooth, medium deep; calyx half open; segments erect convergent. Core closed; cells ovate;

tube long, narrow, open to core; stamens marginal; seeds short, plump; flesh yellowish white, very tender, juicy, pleasant, vinous subacid, almost saccharine, very good. December to March.

McMahon (*McMahon White*).—Origin, Wisconsin, from seed planted about 1860, it is claimed, from seed of Alexander; it is doing well in Wisconsin and parts of southern South Dakota and Minnesota, but is not a first-class shipper as the skin is tender, and shows bruises readily; tree a very strong grower and a good bearer.



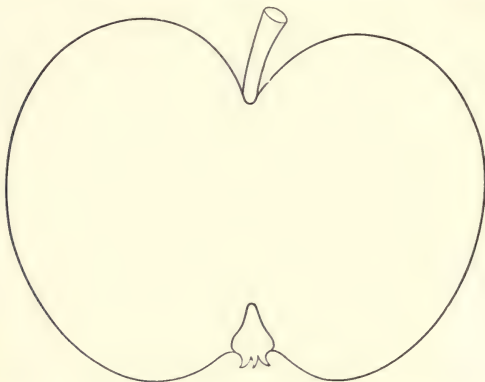
McMahon.

Fruit large to very large, roundish, somewhat conical, obscurely angular and irregular; surface light yellow, becoming almost clear white when fully ripe, often with delicate blush; dots white, large, suffused; cavity deep, acute, russeted; stem short to medium, stout; basin medium deep, wavy, narrow; calyx open; segments divergent. Core closed, irregular, sessile; tube obtusely conical; stamens basal; flesh white, coarse-grained, crisp, juicy, sprightly subacid, good, very good for cooking. October to December.

Magog Red Streak.—Raised from seed by William Warren, Newport, Vermont; tree thrifty, vigorous, upright, spreading, productive.

Fruit medium or nearly so, roundish, inclining to oblong; light yellow, shaded and faintly striped and splashed with light red over half the fruit; stem short, small; calyx closed; basin medium, corrugated; flesh yellowish, a little coarse, moderately juicy, mild subacid; Core medium, fair to good. December, March.

Maiden Blush.—Origin, New Jersey; tree vigorous, productive; fruit much esteemed for table, market, cooking, and evaporating.

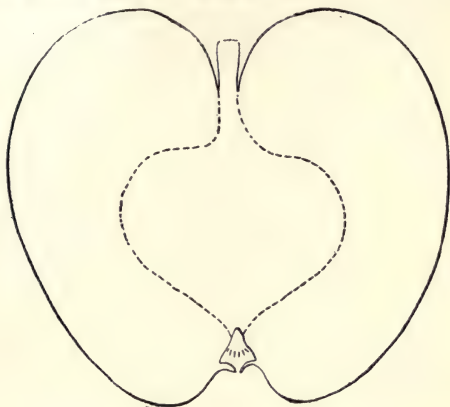


Maiden Blush.

Fruit rather large, oblate, very regular, slightly conical; surface very smooth, polished, delicate waxy, clear pale yellow, with beautiful deep crimson cheek, the two colors often joining in brilliant red; cavity rather wide, deep, with trace of russet; stem short; basin wide, smooth, medium; calyx closed; segments erect convergent. Core closed; cells ovate; tube short, conical; stamens marginal; flesh white, tender, brisk, pleasant aromatic subacid, not rich, good. September, October.

Malinda.—Originated by Mr. Rollins of Orange Co., Vermont, named for one of his daughters, introduced into Minnesota by his son, I. W. Rollins, of Elgin, Minn., about 1858 or 1860. Tree a slender,

straggling grower in nursery, and tardy bearer; tree has done well in northern Iowa and southern Minnesota, and bears early when top-grafted on Hibernial apple or Virginia crab.



Malinda.

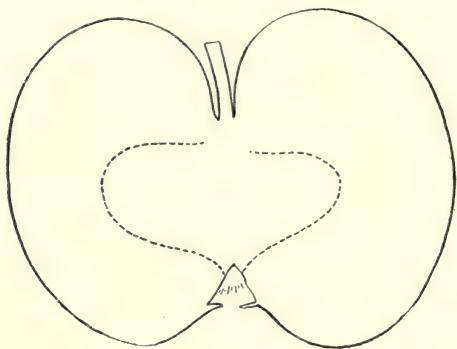
Fruit above medium to large, sharply conical, somewhat angular and ribbed; surface smooth, rich yellow with dull red blush; dots minute, white, distinct, numerous; cavity acute, medium, regular, with stellate russet patch; stem short, stout; basin narrow, abrupt, wavy, corrugated, deep; calyx closed. Core closed, meeting; tube conical; stamens median; flesh yellowish white, firm, juicy, very mild subacid, with sweet after-taste, fair. Late winter.

Mangum (*Gulley*).—Origin, Alabama; extensively cultivated and highly prized in the South; tree thrifty, very productive.

Fruit medium, oblate, slightly conic; surface yellowish, striped, and mostly shaded with red; dots numerous, whitish and bronze; cavity broad, russeted; stem slender, short; basin slightly corrugated; calyx half open; flesh yellow, very tender, juicy, mild subacid, very good to best. October to November.

Mann.—Origin, Granby, New York; tree a vigorous, spreading grower and an early and annual bearer; fruit a late keeper but lacks attractive color.

Fruit above medium; form regular, oblate; surface very green in early winter, changing to deep yellow when fully ripe, overlaid with whitish, often with brownish, pink blush; dots distinct, numerous, dark russet centres with whitish base; cavity regular, acute, deep, trace of russet; stem short; basin regular, slightly wrinkled, wide, medium deep; calyx generally closed; segments connivent. Core



Mann.

closed, sessile; cells ovate or elliptical; tube conical or funnel-shaped; stamens median; seeds plump; flesh yellow, firm, juicy, crisp, fine-grained, pleasant subacid, good. Late winter.

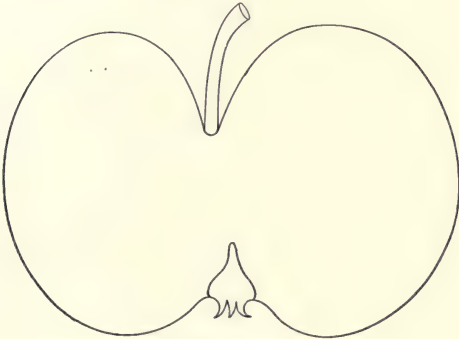
Margaret, Early Red.—A very old English variety, of slender growth; a moderate bearer; fruit good when freshly picked, but soon becomes mealy. It is desirable to gather it a few days before it ripens on the tree.

Fruit below medium, roundish ovate, somewhat conical, angular toward basin; surface greenish yellow, nearly covered with dark red stripes, brighter red on sunny side; dots gray, russet, distinct; cavity small, shallow; stem short, stout; basin narrow, very shallow, corrugated, with small knobs around the eye; calyx prominent, half open; segment long, broad, erect convergent. Core closed; cells roundish ovate, or obovate, axile; tube funnel-shaped; stamens median; flesh greenish white, brisk, juicy, pleasant, rich, refreshing subacid, good. July, immediately after early harvest.

Maryland, Maiden Blush.—Origin, Maryland; tree vigorous and an early and heavy bearer.

Fruit above medium, roundish conical; surface yellow, with distinct blush; flesh white, fine-grained, tender, excellent. Autumn.

Mason Stranger.—Origin, Virginia; a chance seedling on the farm of Dr. Geo. Mason; tree vigorous, a heavy annual bearer.



Mason Stranger.

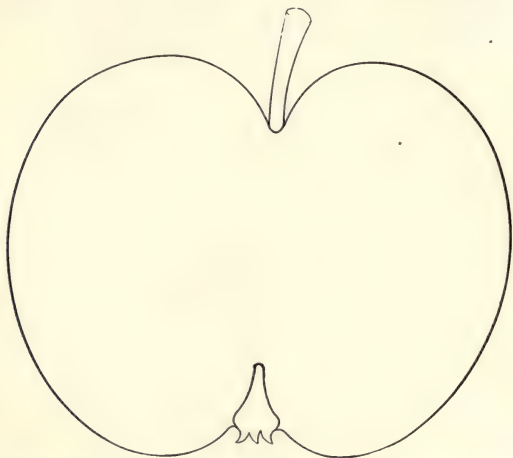
Fruit medium; oblate, somewhat depressed; surface light, bright yellow, sometimes a shade of light red where exposed to the sun; dots few, brownish; cavity large, slight russet; stem short, small; basin large, deep, smooth; calyx open. Core small; flesh whitish, fine, rather compact, crisp, juicy, mild subacid, inclining to sweet, somewhat spicy and rich, very good. December, February.

Mattamuskeet.—Origin, eastern North Carolina, in peaty section of coast region, and appear mainly, if not only, adapted for that region where it is one of the best winter apples. Not recommended for western North Carolina; tree vigorous, productive.

Fruit medium, roundish oblate conic, surface yellow, shaded and splashed with light and dark red; flesh whitish yellow, crisp, brisk subacid, good. December to March.

Maverack.—Originated by Dr. Maverack, South Carolina; tree vigorous, productive, fruit valuable for market and cooking.

Fruit large, roundish oblate, obscurely conical; surface yellow, mostly shaded and striped with bright red; dots few, gray; cavity rather large; stem short; basin deep, corrugated; calyx open.



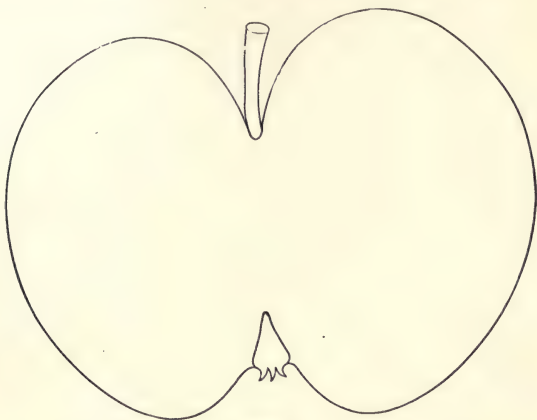
Maverack.

Core small; flesh yellowish, tender, rich, sweet, very good. November to February.

Melon, Norton.—Origin, East Bloomfield, New York; tree a rather slow grower while young, spreading, round-topped, productive; fruit too tender for distant shipment.

Fruit medium to large; form roundish oblate, slightly conical, obscurely ribbed toward the basin; surface smooth, pale waxen yellow, nearly covered with marbled and mixed bright red, distinctly splashed and striped with darker crimson, with net-veining and patches of very thin smooth pale brown russet; dots minute, few, light and brown; cavity large, deep, acute, wavy, often with much russet; stem medium, slender; basin wide, medium, slightly corrugated; calyx half open. Core partially open, clasping; cells round, axile, slit; tube conical; stamens marginal, median, or basal; seeds

numerous, medium, angular; flesh yellowish white, very tender, crisp, juicy, aromatic, sprightly subacid, best. November to March.



Melon.

Milam.—Origin uncertain; an old favorite Southern and South-western variety; tree of moderate vigor, round-headed, very productive, and an annual bearer.

Fruit small to medium, conical to roundish conical, very regular; surface smooth, greenish yellow, washed and marbled with dull brownish red, obscurely striped and splashed; dots distinct, many, variable, gray and russet; cavity regular, acute, russeted; stem medium to long; basin very shallow, narrow, regular, nearly smooth, often leather-cracked; calyx closed; segments divergent. Core slightly open, clasping; cells round, entire; tube funnel-shaped; stamens median; seeds many, plump, pointed, some imperfect; flesh white, rather firm, mild pleasant subacid, not rich, good. December to March.

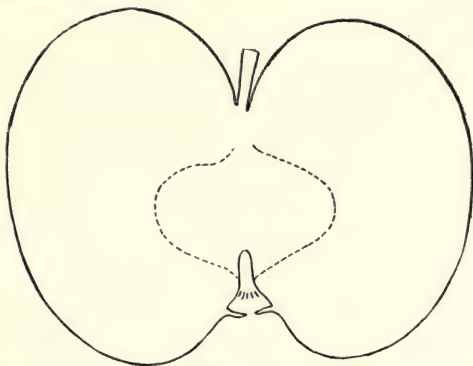
Milding.—Origin, Alton, New Hampshire; tree a vigorous, heavy biennial bearer; a good market and family apple.

Fruit large; form regular, oblate, slightly conical and angular; surface unctuous, whitish yellow, mostly covered with striped, shaded,

and mottled dark bright red; dots obscure, few, light, minute; cavity shallow, wide, with radiating russet, funnel-shaped; stem short; basin abrupt, furrowed, rather shallow; calyx closed or nearly so; segments divergent. Core open; cells obovate, slit; tube conical; stamens basal; seeds short, plump, pointed; flesh whitish yellow, tender, rather coarse, crisp, juicy, sprightly subacid, good. December to January.

Millboy.—Origin, West Virginia. Reported as well adapted for growth in lowlands, such as creek and river bottoms, where most apples do not succeed.

Fruit large, roundish, slightly flattened, regular; skin thin, tenacious; surface smooth, yellow, washed with red and striped with crimson, having a slight bloom; dots yellow; cavity large, regular, deep, flaring, russet; stem short, moderately stout; basin medium in size and depth, flaring, slightly furrowed; calyx medium, closed; segments short, wide, converging. Core large, wide, clasping, closed; seeds numerous, large, plump, brown; flesh yellowish, moderately fine, tender, juicy, sweet, good. August and September. (U. S. Dept. of Agriculture, 1895.)



Milwaukee.

Milwaukee.—Originated from seed of Oldenburg by Geo. Jeffry, Milwaukee, Wisconsin; tree of moderate spreading growth, an early and good bearer. A promising new variety for the North.

Fruit large, oblate, much flattened at ends, slightly angular; surface greenish yellow, splashed and striped, marbled and dotted with bright red and crimson; dots obscure, many, minute, white; cavity broad, deep, regular, obtuse, with some stellate russet; stem short, rather stout; basin wide, abrupt, deep, slightly wrinkled; calyx open; segment erect convergent. Core small, slightly open; tube funnel-shaped, long, wide; stamens median; seeds few, short, plump; flesh yellowish white, very tender, juicy, pleasant acid, good for table and very good for cooking. Midwinter and later.

Minister.—Origin, Rowley, Massachusetts; tree moderately vigorous, early and heavy bearer.

Fruit large; oblong conical, ribbed, irregular; surface smooth, greenish yellow, covered with bright, rich, mixed red, with obscure carmine stripes and splashes on sunny side; dots minute; cavity deep, acute, sometimes brown; stem long, slender, curved; basin very narrow, corrugated and ribbed; calyx small, closed. Core large, open; flesh yellowish, very tender, juicy, rather acid, good. Early winter.

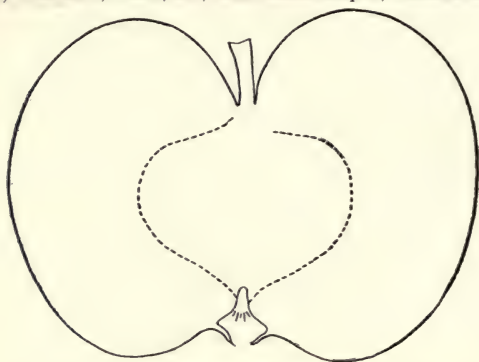
Minkler.—Probably an old unidentified Eastern variety; named after S. G. Minkler, of Illinois, and popular in that State; tree very vigorous, of irregular, spreading growth; branches strong, forming a large angle with the trunk; productive.

Fruit medium to large, roundish oblate, regular; surface smooth, greenish yellow, mostly covered with mixed red, with indistinct darker dull red stripes; dots many, minute, distinct, yellow, and russet; cavity regular, rather deep, acute, light brown russet; stem medium; basin wide, shallow, smooth; calyx small, closed. Core closed, small; cells obovate, entire, small; tube funnel-shaped; stamens marginal; seeds long, pointed; flesh yellowish white, firm, juicy, mild, pleasant subacid, good. January to May.

Minnesota Gilbert.—From Minnesota; origin uncertain; recommended for trial by the Horticultural Society of that State under the name of Gilbert, but as this name has long been occupied by a Tennessee variety the name is modified as above.

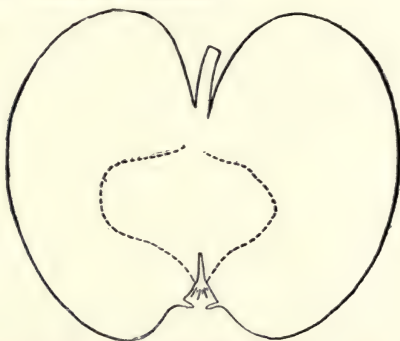
Fruit medium, regular, oblate to very oblate; surface greenish yellow, mostly covered with mixed red, with dark crimson splashes and stripes much like a highly colored Oldenburg; dots distinct, numerous, gray, rather large; cavity regular, wide, with radiating light yellow russet; stem short; basin regular, wide, shallow smooth,

or with a few minute wrinkles or prominences around calyx; calyx wide, open; segments convergent. Core closed, small, clasping, sessile; cells axile, round, slit; tube funnel-shaped; stamens median;



Minnesota Gilbert.

seeds very large, flat; flesh white, juicy, sprightly subacid, good; use culinary. August to September.



Missouri Pippin.

Missouri Pippin.—Origin, Johnson Co., Missouri; tree a strong grower and heavy annual bearer.

Fruit medium; form roundish oblate, somewhat conical; surface yellow, mostly covered with light and dark distinct crimson stripes and splashes; dots distinct, white and gray, numerous, large and small; cavity deep, regular, acute; stem short; basin abrupt, deep, nearly smooth; calyx half open; segments divergent. Core small, closed; cells round, entire; tube funnel-shaped; stamens median; seeds short, plump; flesh yellow, with yellowish veinings, pleasant subacid, good. January to April.

Mitchell's Red Warrior.—Originated in 1869 or 1870, at Cresco, northern Iowa, by J. B. Mitchell; tree hardy and very productive. Distinct from the Red Warrior described by Downing. A good apple, but the present name is too long.

Fruit above medium to large, roundish, slightly conical, regular; surface light yellow, nearly covered with bright mixed red and crimson, heavily and distinctly striped and splashed with carmine, a beautiful fruit; dots obscure, few, very minute, white; cavity regular, narrow, acute, slightly russeted; stem short; basin narrow, very abrupt, wavy; calyx open; segments erect convergent. Core closed; cells ovate, slit; tube funnel-shaped; stamens median; seeds few, flattened, long-pointed, medium; flesh white, juicy, pleasant subacid, good. Season, same as Wealthy.

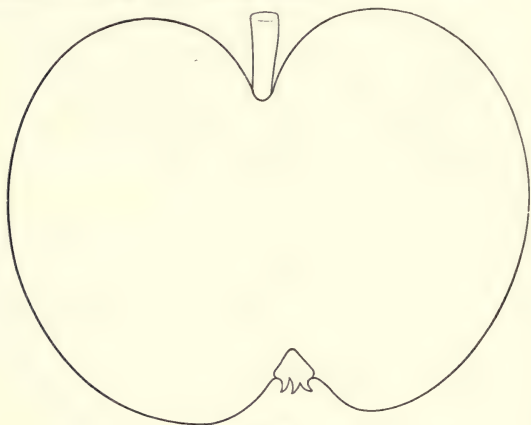
Monmouth (Red Cheek Pippin).—Origin, Monmouth Co., New Jersey; tree productive, of moderate upright growth.

Fruit large; form roundish oblate, slightly conic, obscurely five-angled, slightly truncated; surface greenish yellow, with handsome red blush; dots minute, green and russet; cavity large, wide, regular or wavy, slightly russeted; stem short, thick; basin abrupt, deep, corrugated; calyx half open. Core medium, closed, clasping; seeds numerous, pointed, brown; flesh white, juicy, crisp, mild, aromatic subacid, very good. November to April.

Monsees.—Originated by J. H. Monsees, Beaman, Mo. At first named Hopewell, but this name is already occupied by a variety from Pennsylvania. The Monsees is of recent introduction and is a handsome fruit, intermediate in appearance between Ben Davis and Winesap.

Fruit large to very large, roundish, conical; surface a rich yellow, almost or wholly covered with fine dark red with crimson stripes and splashes; dots distinct, few, minute, russet; cavity deep, acute, russeted, the rays often extending out over base; stem short; basin shallow, ribbed and corrugated, sometimes very shallow; calyx

open; segments short, erect convergent. Core closed; cells round, slit; tube funnel-shaped; stamens median; seeds plump; flesh white, pleasant subacid, good. Season, winter.



Monmouth.

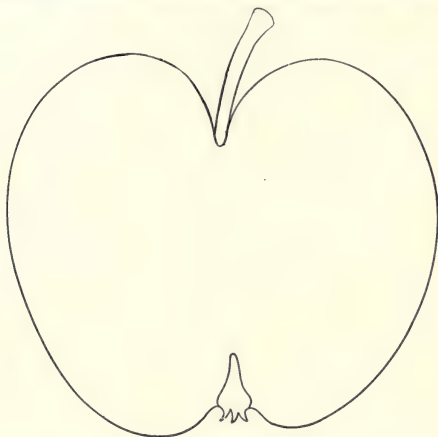
Moore Sweet.—Of American origin; tree vigorous, very productive.

Fruit medium to large; form roundish oblate, regular; skin thick; surface smooth, greenish yellow, entirely covered with dull dark red in obscure stripes overlaid with grayish bloom, giving the fruit a purple color; dots minute, few; cavity wide, or acute, deep, green or brown; stem short, rather stout; basin wide, wavy or plaited; calyx closed. Core small, closed; seeds numerous, plump, pale; flesh yellow, rich, dry, firm, very sweet, good. December to May.

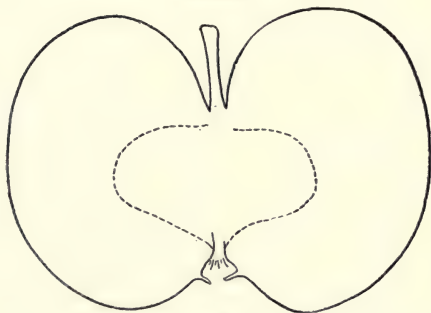
Mother.—Origin, Bolton, Massachusetts; tree of moderate vigor, rather slender, productive.

Fruit medium or above; form roundish oblong, slightly conical, obscurely ribbed; surface golden yellow, almost wholly covered with clear, warm, rich red, splashed, marbled, striped with several shades of dark red and crimson; dots minute, light russet, numerous; cavity acute, deep, often a little russeted; stem slender, medium to long; basin narrow, small, corrugated; calyx closed. Core medium, closed,

clasping; cells elliptical, abaxile; calyx-tube conical, inclining to funnel-shaped; stamens median; seeds numerous; flesh yellow,



Mother.



Munson.

especially toward the surface, juicy, very rich, spicy aromatic subacid, best. November to February.

Munson (*Munson Sweet*).—Origin probably Massachusetts; tree vigorous, spreading, an abundant annual bearer.

Fruit below medium; form very regular, oblate; surface yellow, with blush on sunny side; dots obscure, numerous, whitish; cavity deep, wide, regular, obtuse; stem short; basin smooth, regular, leather-cracked; calyx open; segments erect convergent. Core closed; cells round, slit; tube funnel-shaped, wide, open to core; stamens marginal; seeds short, plump; flesh yellow, with yellow veinings, excellent. September to February.

Nansemond (*Nansemond Beauty*).—Supposed origin, Virginia; tree vigorous, rather spreading, a good annual bearer.

Fruit medium, roundish oblate, slightly conic; surface pale yellow, nearly covered with light and dark rich red, sometimes rather obscure stripes and splashes of a darker hue; cavity quite large, slight russet; stem short, small; basin large, deep, slightly corrugated; calyx half open. Core small; flesh quite white, half fine, crisp, tender, juicy, vinous subacid. January, April.

Nero.—Origin, Princeton, Mercer Co., New Jersey; tree vigorous, spreading.

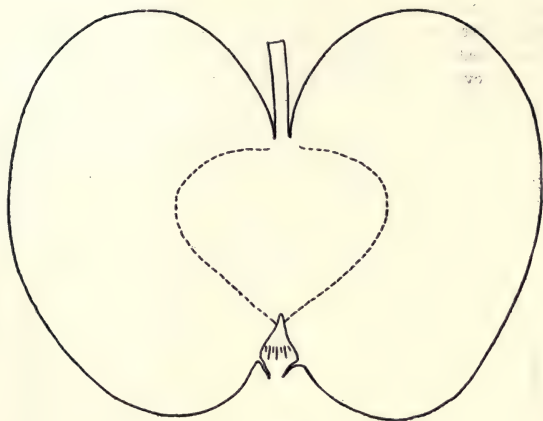
Fruit large, roundish oblate; surface clear yellow, nearly covered with dull red, deepening into dark red, with patches and marblings of russet; dots few, large, roundish, with grayish centres; cavity narrow, deep, regular, russeted; stem one-half inch long, medium; basin very broad, saucer-shaped, ribbed; calyx large, open; segments long; tube short, funnel-shaped; flesh whitish, juicy, firm, crisp, with a mild, subacid, slightly aromatic flavor, quality good. Season, January to April. (Mich. Exp. Sta. Bul., 169, p. 187.)

Newell (*Orange Winter*).—Originated over fifty years ago in Sauk Co., Wisconsin, by Orange Newell, from seeds of Perry Russet brought from New York.

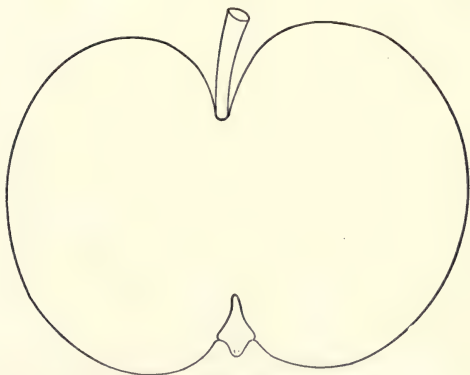
Fruit large, roundish oblate, irregular, angular; surface a rich yellow, with faint bronze blush on sunny side; dots green, minute, with numerous russet dots; cavity wide, deep, ribbed; stem short; basin wide, ribbed, rather deep; calyx half open. Core closed, meeting; calyx-tube funnel-shaped; stamens median; flesh firm, juicy, yellowish, rich, sprightly subacid, very good. Winter.

Newtown Spitzenburg.—Origin, Newtown, Long Island; tree moderate, vigorous, spreading, and productive.

Fruit medium, regular, roundish oblate, slightly conical; surface clear, rich yellow, shaded with light red, with deep red stripes and splashes, often overlaid with whitish; dots many, minute, russet, with some peculiar gray specks; cavity wide, deep, regular, lined with



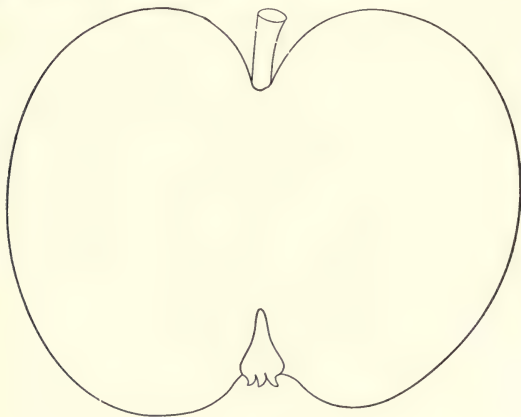
Newell.



Newtown Spitzenburg.

russet; stem short; basin wide, smooth, medium deep; calyx small, closed. Core half open; cells wide open, obovate; tube conical; stamens median; seeds many, angular; flesh yellow, firm, crisp, tender, juicy, rich, sprightly aromatic flavor, scarcely subacid, best. October to February.

Nickajack.—Origin, Georgia; widely distributed in the South and known under many synonyms; it reproduces itself quite closely from seed; tree upright, spreading, large, very productive.



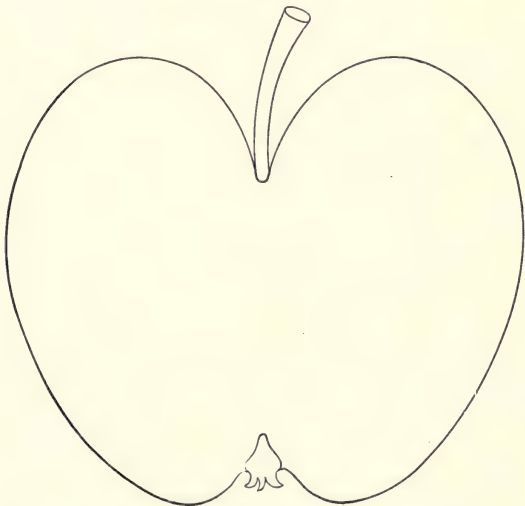
Nickajack.

Fruit large, roundish to roundish oblate, slightly conic, sometimes oblique; surface yellowish, striped, shaded, and splashed with two shades of red and with a grayish appearance, as if covered with a thin bloom; dots many, large, areole; cavity large, acute, medium deep, yellow and russet; stem short; basin medium, slightly corrugated; calyx partially open. Core small, closed; seeds many, large, plump; flesh yellowish, compact, moderately tender and juicy, negative subacid, good. Late winter.

Nixonite (*Ozark Mammoth*).—Originated "on the farm of M. Nixon, near Hopewell, Mo., some fifty or seventy-five years ago. It came up from seed alongside of an old lead mine." Tree not an early bearer but productive with age. Much grown in southeastern Missouri.

Fruit large to very large, roundish, truncated, nearly regular sometimes unequal; surface clear rich yellow, overlaid with whitish; dots obscure, numerous, white, minute, suffused, a few large russet dots; cavity deep, narrow, acute, lined with stellate russet; stem short; basin abrupt, wavy, medium; calyx open; segments divergent, long, pointed. Core open, axile, wide, flattened; cells round, slit; tube funnel-shaped: stamens median; seeds plump; flesh yellowish, with yellow veinings, juicy, crisp, sprightly, spicy, subacid, very good. Winter.

Northern Spy.—Originated about 1800 in East Bloomfield, near Rochester, New York; tree blooms late and is of rapid upright growth, spreading with age, not an early bearer but productive when old, needs high culture and pruning to admit the sun and air to the fruit.



Northern Spy.

Fruit large; form roundish, oblate, conical, obscurely angular; surface smooth, greenish yellow, thinly covered with light and dark purplish red overlaid with a thin whitish bloom; dots, obscure, few,

yellow, minute; cavity very wide, deep, sometimes with radiating russet; stem medium; rather slender; basin narrow, abrupt, furrowed; calyx small, closed; segments flat convergent, very small. Core large, open; cells ovate, entire; tube funnel-shaped; stamens median; seeds numerous, short, plump; flesh white, fine-grained; juicy, tender, delicious, spicy, subacid, very good to best. December to June.

Northern Sweet.—Origin, St. George, Vermont; desirable for the home orchard.

Fruit large, roundish conical, angular; surface whitish yellow with bronze blush; dots obscure, numerous, minute, russet and whitish, cavity shallow, regular, wide, obtuse, with radiate russet; stem, medium to long; basin narrow, ribbed, angular, abrupt, shallow; calyx open; segments divergent. Core closed; cells round, slit; tube funnel-shaped, large; stamens median; seeds plump; flesh white, with yellow veinings, sweet, good. September, October.

Northfield.—Origin, Vermont; tree rather vigorous with roundish head.

Fruit large, roundish oblate, sides unequal; surface whitish yellow, blushed and faintly striped with red and netted more or less with russet; cavity broad, moderately deep, slightly russeted; stem one inch long, rather stout; basin wide, abrupt, moderately deep, corrugated; calyx medium, nearly closed. Core medium, closed; tube long, funnel-shaped; flesh juicy, crisp, tender, mild subacid; quality rather poor. [Downing wrote "good for cooking."] Season September to December. (Mich. Exp. Sta. Bul., 169, p. 787.)

Northwestern Greening.—Origin, Waupaca Co., Wisconsin; introduced in 1872 by E. W. Daniels.

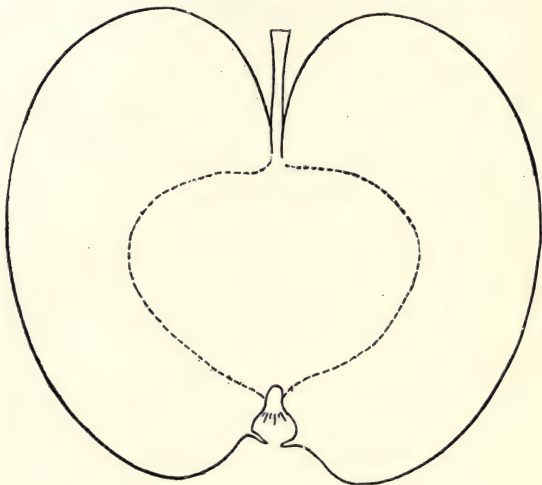
Fruit large to very large, roundish oblong, slightly conical, truncated, regular; surface yellowish green, unctuous; dots white, small, some with gray bases, a few large russet dots; cavity regular, deep, acute, sometimes slightly russeted; stem rather short; basin regular, finely wrinkled around the eye; calyx open. Core closed, clasping; tube funnel-shaped, broad; stamens median; flesh greenish yellow, firm, juicy, subacid, good. All winter.

J. S. Harris: "It does a little better top-worked on hardy stocks, i.e., crabs and hybrids." (Minn. Hort. Rep., 1895, p. 155.)

Nottingham Brown.—Origin, Pennsylvania.

Fruit large, roundish; skin medium thick, tenacious; surface with

raised dots, and russet knobs, yellow, washed with mixed crimson, splashes, and broad broken stripes of dark crimson; dots prominent, areole; cavity regular, large, deep, with russet markings; stem short, stout; basin regular, large, deep, abrupt, with furrows and corrugations; calyx small, closed; segments long, converging. Core conical,



Northwestern Greening

small, clasping, partially open; seeds numerous, medium, plump, brown; flesh yellowish, satiny, moderately fine, breaking, juicy, sprightly subacid, good to very good. Winter. (U. S. Div. of Pomology, 1902.)

Noyes, Doctor.—Origin, America.

Fruit small, oblate, ribbed; skin thin, tenacious; surface moderately smooth, yellowish, washed over nearly entire surface with dark crimson, a few broken stripes of yellow on pale red, without bloom; dots few, yellowish; cavity wide, large, deep, russet extending over surrounding surface; stem short, slender, downy; basin regular, large, deep, abrupt, furrows and down; calyx small, closed; seg-

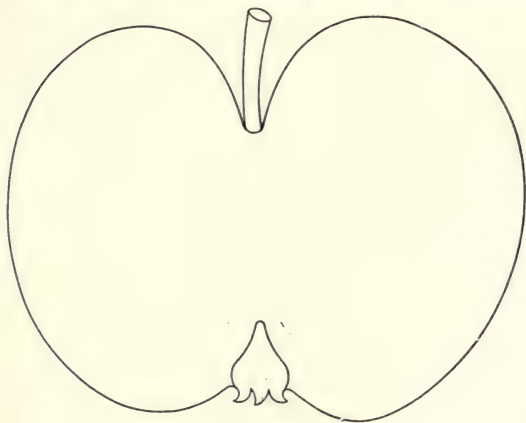
ments small, converging. Core oblate, clasping, medium; seeds numerous, plump, medium, brown; flesh yellowish, fine, tender, juicy, subacid, very good. Winter. (U. S. Div. of Pomology, 1902.)

Oconee.—Origin, bank of Oconee River, near Athens, Georgia, tree vigorous and productive.

Fruit large; form roundish-flattened; surface yellow, a little brownish in the sun; dots few, russet; cavity rather regular, deep, russeted; stem short; basin shallow, slightly furrowed; calyx open; flesh yellowish, fine-grained, crisp, abounding in a delightful aromatic, lively, subacid juice, good to very good. October to November.

Ogle (*Winter Snow*).—Origin, Illinois.

Fruit medium, oblate, slightly oblique; skin thin, tenacious; surface smooth, except for raised dots and fine leather-cracking,



Ohio Nonpareil.

yellowish, washed with scarlet and striped with dark crimson; dots conspicuous, yellow, protruding, some areole; cavity wide, deep, flaring, russet-netted; stem about one inch long, slender, with bracts; basin large, regular, deep, abrupt, corrugated, and lined with bloom; calyx small, closed; segments long, narrow, converging or reflexed. Core medium, roundish, clasping, partially open; seeds numerous,

small, plump, brown; flesh whitish, moderately fine-grained, crisp, juicy, very mild subacid, good to very good. Winter. (U. S. Div. of Pomology, 1895.)

Ohio Nonpareil.—Originated with Mr. Myers near Massillon, Ohio. Tree vigorous, wide spreading.

Fruit large; form roundish oblate, regular; surface smooth, yellow, shaded, marbled and splashed with two shades of rich bright red; dots few, light, gray; cavity large, deep, acute, regular; stem short, rather slender; basin wide, regular, medium; calyx rather large, partially open; segments rather short. Core small, somewhat open; seeds many; flesh yellowish white, fine-grained, tender, juicy, rich, slightly aromatic, subacid, very good. October, November.

Ohio Pippin (Shannon).—Supposed origin, Dayton, Ohio; tree vigorous, large spreading, moderately productive.

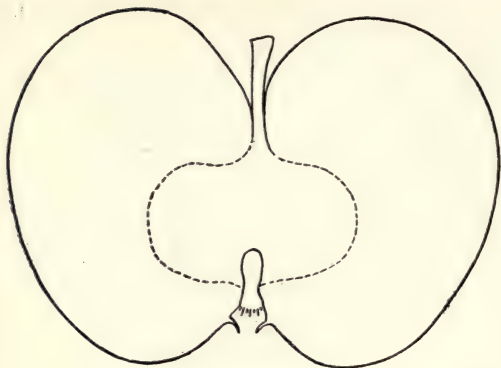
Fruit large, often very large, roundish oblate, somewhat conical, irregular; surface smooth, yellow, sometimes with mottled red blush; dots small, gray; cavity wide, wavy or regular, russeted; stem short, stout; basin wide, deep, wrinkled; calyx large, or very large, open; segments short. Core closed, meeting, small; seeds many, medium plump, some imperfect; flesh yellowish, tender, juicy, pleasant, sharp subacid, good. November, January.

Okabena.—Originated on the banks of Lake Okabena, near Worthington, southwestern Minnesota. A seedling of Oldenburg, fertilized by Wealthy from seed furnished by Peter M. Gideon in 1871.

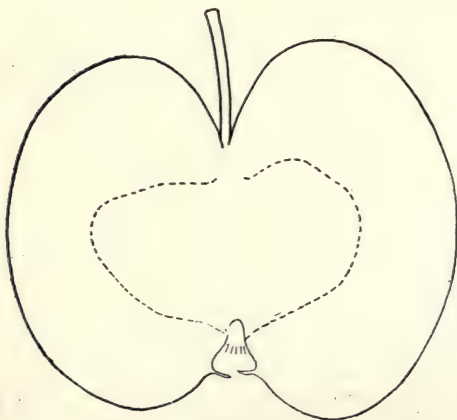
Fruit large, regular, oblate; surface greenish yellow, striped and splashed with red, sometimes covering the entire surface, on sunny side mixed and marbled with dark crimson stripes and splashes; dots minute, scattered, white, obscure; cavity regular, deep, sometimes russeted; stem variable; basin a marked characteristic, wide, rather shallow, regular, sometimes abrupt; calyx closed. Core closed, clasping; tube funnel-shaped; stamens marginal; flesh white, sometimes stained, fine-grained, juicy, subacid, very good. December.

Oldenburg, Duchess of.—This well-known Russian variety is the hardiest of the old list, its endurance of severe winters encouraged the importation of other sorts from Russia.

Fruit large; form roundish oblate, regular; surface smooth, greenish yellow, almost wholly covered with stripes and splashes, mixed on sunny side with crimson; a handsome fruit; dots white,



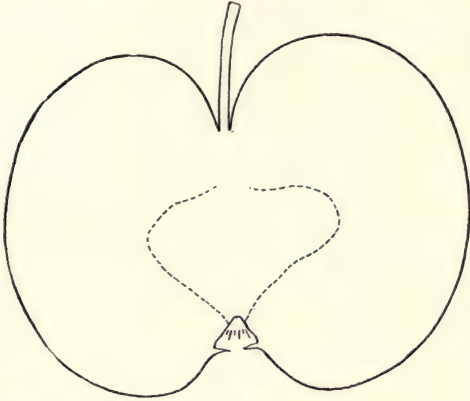
Okabena



Oldenburg.

numerous, minute; cavity deep, regular, acute, small radiating patch of russet in bottom; stem short to medium; basin abrupt, regular, small protuberances around the eye; calyx closed; segments long, broad, connivent. Core closed; cells ovate, axile; tube funnel-shaped; stamens median; flesh white, slightly acid. August.

Oliver (*Senator*; *Oliver Red*).—A handsome late fall apple now much grown in its native state, Arkansas.



Oliver.

Fruit large, roundish oblate, form variable, from nearly flat to roundish slightly flattened; surface deep rich yellow wholly covered with bright rich red, coloring obscurely splashed on sunny side, marbled, mixed and dotted on shaded side; dots numerous, large, very distinct, russet; cavity regular, medium, obtuse, lined with green and russet; stem medium, stout; basin wide, deep, obscurely ribbed and wrinkled; calyx open; segments erect convergent. Core half open, small, meeting; cells ovate, slit; calyx-tube conical; stamens basal; seeds few, plump, long, pointed; flesh yellowish, sometimes tinged with red, fine-grained, juicy, mild, pleasant, rich, subacid, very good. November and December in Arkansas.

Ontario—Originated by the late Charles Arnold, Paris, Ontario, Canada, from seed of Northern Spy crossed with Wagener; tree

of moderate vigor, somewhat spreading, an early and heavy bearer.

Fruit large to very large, oblate, sometimes roundish, slightly angular; surface whitish yellow, mostly covered with bright rich red, with obscure carmine splashes and stripes, with pale pink bloom; dots few, light, distinct; cavity deep, broad, slightly russeted; stem short, rather stout; basin medium to rather deep, slightly wrinkled; calyx small, open or closed. Core small; flesh yellowish white, crisp, tender, juicy, sprightly, slightly aromatic, brisk subacid, very good. January to April.

Ortley.—Origin, orchard of Michael Ortley, New Jersey; tree vigorous, large, spreading, very productive.

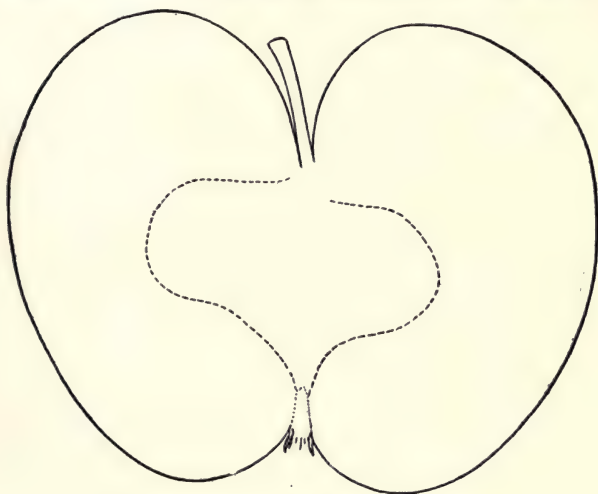
Fruit large, oblong conic; surface smooth, clear, pale yellow, rarely with light blush and red spots; dots minute, obscure, indented, russet; cavity deep, acute, regular, lined with russet; stem long, slender; basin narrow, shallow, with corrugations and fine wrinkles; calyx small, closed; segments divergent. Core large, oval, open, distant, meeting; cells abaxile, ovate, slit; tube conical; stamens median; seeds numerous, short, plump, pointed, easily loosened, so that they rattle in the large cells; flesh yellowish white, firm, tender, fine-grained, juicy, sprightly, very pleasant subacid, very good to best. November to January.

Paragon (*Mammoth Black Twig*).—Originated in the orchard of Major Rankin Toole, Lincoln Co., Tenn., nearly seventy years ago, and first propagated about 1870. This variety and Arkansaw were mixed for a time in nurseries under the names Paragon and Mammoth Black Twig; the trees are very similar in fruit and habit of growth, but are now considered quite distinct. Both appear to be seedlings of Winesap. (See Gilbert apple description.) The Paragon is now extensively raised in various parts of the South, and is a profitable late winter market variety; tree very vigorous, spreading, rather an open head, not an early bearer. (The cut is outlined from Tenn. Exp. Sta. Bul., Vol. IX., No. 1, May, 1896.) Dr. W. L. Moores, Cyruston, Tenn., in 1895, upon request sent both Gilbert and Paragon to the U. S. Dept. of Agriculture and wrote:

"Both originated in this neighborhood; both original trees are standing (December, 1895), and bore fruit this season. I named both apples and introduced them to public notice about eight years ago. The Paragon has obtained wonderful popularity, yet I believe

it is an inferior apple to Gilbert, its twin-brother. Both apples are apparently a cross of Black Twig (Winesap) and Limbertwig, and are so much alike in appearance as to require an expert to distinguish them."

Fruit large, roundish conical; skin thick, tough; surface smooth, yellow, washed with red, having a few indistinct stripes; dots medium,



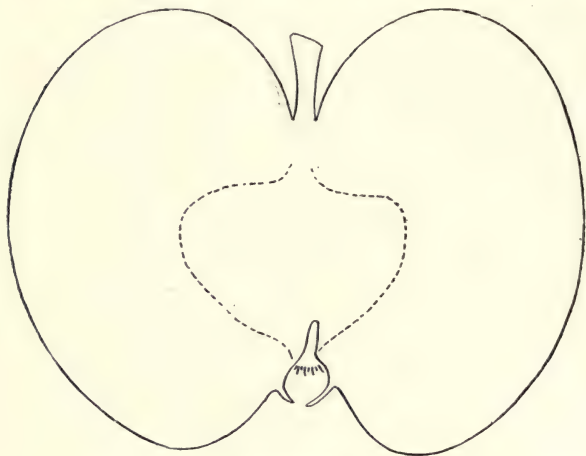
Paragon.

yellow; cavity large, regular, deep, flaring. russet; stem short, slender; basin medium in size and depth, abrupt, furrowed; calyx small, nearly closed; segments small, converging, or slightly reflexed. Core medium, conical, clasping, partially open; seeds numerous; medium, plump, brown; flesh yellow, moderately fine-grained, breaking, juicy, subacid, very good. Winter.

Patten Greening (*Duchess No. 3*).—A seedling of Oldenburg; seed grown near Portage, Wis., and planted in fall of 1869 by C. G. Patten, Charles City, Iowa; tree productive, of somewhat stronger growth than Oldenburg, with limbs strongly shouldered. The Min-

nesota State Horticultural Society has recently put it on the list recommended for general cultivation as of first degree of hardiness.

Fruit large, roundish oblate, irregular, obscurely angular; surface yellowish green, with bronze blush; dots minute, white, mostly with green bases on shaded side; cavity regular, acute, russeted; stem short to very short; basin broad, slightly wavy, abrupt; calyx open. Core closed, small, clasping; tube narrow, funnel-shaped; stamens



Patten Greening.

median; flesh white, juicy, sprightly subacid, good for table, excellent for cooking. October to January.

Payne Late Keeper.—Originated on the J. G. Payne farm, near Everton, Mo., some sixty years ago, from seeds supposed to have been brought from North Carolina; tree vigorous and productive.

Fruit large, roundish, slightly conical, very regular; surface pale greenish yellow, mostly covered with solid rather light red; dots few, distinct, very large, raised, russet with light bases; cavity deep; regular, obtuse, with large stellate russet patch out over base; stem medium; basin flat, or nearly so, narrow, smooth; calyx half open; segments flat convergent. Core wide open, irregular, meeting, long,

tapering to eye; cells round, slit, abaxile, roomy; tube funnel-shaped, small, short; stamens medium; seeds large, short, plump; flesh white, moderately juicy, firm, mild, pleasant subacid, good. January to June and later.

Peach of Montreal.—Origin, France; tree vigorous, shoots light brown.

Fruit large, roundish oblong; skin thin and tenacious; surface smooth, glossy, white, lightly washed with dull red, indistinctly striped crimson, without bloom; dots yellow or brown; cavity regular, medium, russet circles; stem medium, slender, long; basin regular, medium, abrupt, furrowed; calyx medium, nearly closed; segments long, narrow, slightly reflexed. Core wide, conical, clasping, large; seeds large, short, brown, ten in number; flesh yellowish white, fine-grained, tender, juicy, brisk, sprightly subacid, good. Early autumn. (U. S. Div. of Pomology, 1902.)

Pease, Walter.—Originated in Somers, Connecticut, by Walter Pease, about the first of the nineteenth century.

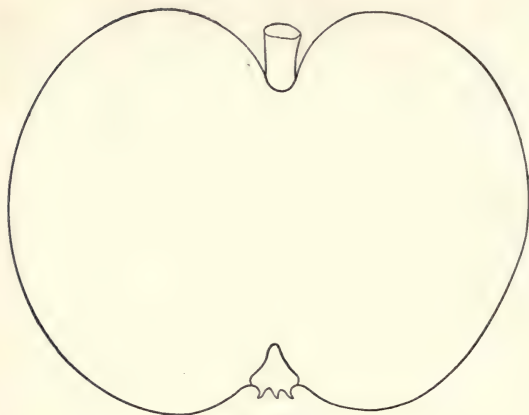
Fruit large, roundish; surface smooth, greenish yellow, washed with pale brick red, splashed and striped with crimson; slight bloom; dots numerous, light russet or gray; cavity large, regular, deep, flaring, greenish, and very slightly russeted; stem short, of medium caliper, curved; basin medium to large, regular, medium to deep, abrupt, furrowed; calyx medium size, nearly closed; segments long, narrow, converging, reflexed at point. Core medium, oval, meeting, nearly closed; seeds few, medium size, angular, brown; flesh whitish, moderately fine-grained, tender, juicy, subacid, very good. Autumn. (U. S. Div. of Pomology, 1895.)

Peck Pleasant.—Origin, Rhode Island; tree spreading, of moderate vigor, productive and a regular bearer.

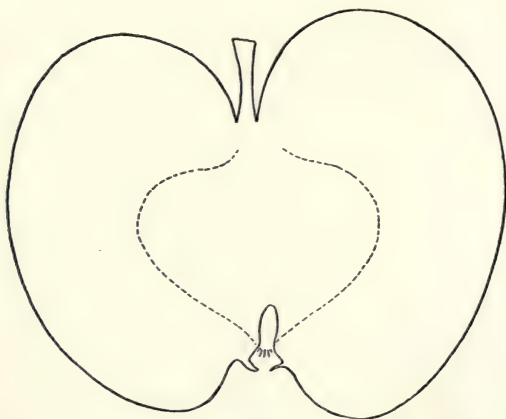
Fruit large, roundish, somewhat angular, or flattened, and with a shallow furrow on one side; surface smooth, a beautiful clear yellow, with bright blush; dots few, gray, with white bases; cavity wide, rather wavy; stem very thick, fleshy, knobby, very short; basin narrow, abrupt, rather deep; calyx small, open; segments short. Core large, closed, clasping; seeds many, angular; flesh yellowish, very tender, fine-grained, crisp, juicy, delicious aromatic, sprightly subacid, very good or best. Early winter.

Peerless.—Originated near Richland, Minnesota, in 1864 or 1865.

Fruit large, roundish oblate, regular; surface greenish, striped



Peck Pleasant.



Peerless.

and splashed rather thinly with dull red, slightly marbled on sunny side; cavity wide, with radiating green (a characteristic); stem short; basin wide, usually abrupt and wavy; calyx closed, or half open. Core closed, clasping; cells round, slit; tube funnel-shaped; stamens marginal; seeds eight to ten, long, pointed, rather slender; flesh firm, juicy, pleasant subacid, good. Late fall, early winter.

Peffer.—"A variety originated by Mr. George P. Peffer, of Pewaukee, Wis., from seeds of Pewaukee apple, and named in his honor. It is thought to be better than the parent variety in some respects, and I bespeak for it a trial in the colder States. Size medium to large; shape, diameters nearly equal, angular, irregular, slightly lop-sided; surface polished, yellow, with abundant splashes and specks of bright red and scarlet, handsome; dots numerous, brown or gray; basin deep, abrupt, irregular or ribbed; eye open, large, with reflexed sepals; cavity medium, sloping, nearly regular, very slightly russeted; stem short, thick, fleshy; core open, small, meeting the deep eye cavity; seeds many, large, plump; flesh white, tender, fine-grained, juicy; flavor subacid; quality fair to good. Season, early winter in Wisconsin." (H. E. Van Deman, U. S. Pomologist, 1889.)

Perfection.—Recommended in Bul. No. 8, U. S. Div. Pomology. "A Wisconsin seedling of Tetofsky; tree perfectly hardy and symmetrical; fruit as large again as Tetofsky and of better quality; August, September; very promising summer apple." (J. V. Cotta in Ill. Hort. Soc. Report, 1897.)

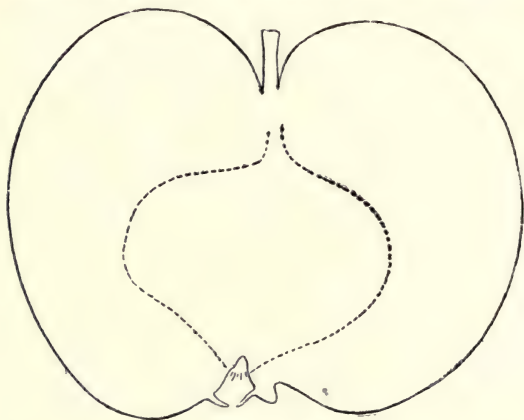
Perry Russet.—Origin, Perry, New York; tree of moderate, spreading, upright growth.

Fruit medium, oblate to roundish oblate, somewhat conical, regular; surface a rich golden yellow, covered more or less with open net-work of russet, some specimens are quite free from russet, or at least as grown in the West; dots distinct, many, large; cavity wide, obtuse, regular, usually with much stellate russet, sometimes lipped; stem short to medium; basin medium deep, abrupt, wrinkled, often corrugated; calyx open; segments divergent. Core closed, barely clasping; cells ovate, axile, slit; tube conical; stamens median; seeds plump, rather small; flesh yellow, firm, fine-grained, rich, juicy, brisk subacid, very good. December to February.

Peter.—Originated from seed of Wealthy by the late Peter M. Gideon, Excelsior, Minn. In fruit this appears nearly, if not quite, identical with Wealthy. Mr. Gideon himself could not distinguish

the two varieties by the fruit, but claimed Peter was hardier in tree; the seeds of the Peter are large, broad, and plump, about ten in number; calyx segments connivent; tube conical and stamens median. In Wealthy the tube is funnel-shaped; stamens median or basal. Wyman Elliott, of Minneapolis, one of the most prominent members of the Minnesota Horticultural Society, after a careful examination of many specimens finds the Wealthy seeds smaller and more pointed; the Peter seeds larger, broader, less pointed, and a little darker when fully ripe. Even if really distinct, the two varieties are now mixed to a considerable extent.

Pewaukee.—Originated by the late Geo. P. Pepper, Pewaukee, Wis., by crossing Oldenburg with Northern Spy pollen. It does well in the lake section of eastern Wisconsin and has found favor in many States, but has not proven as hardy in the North as was hoped. Tree of strong, vigorous growth, with upright centre, an annual bearer.

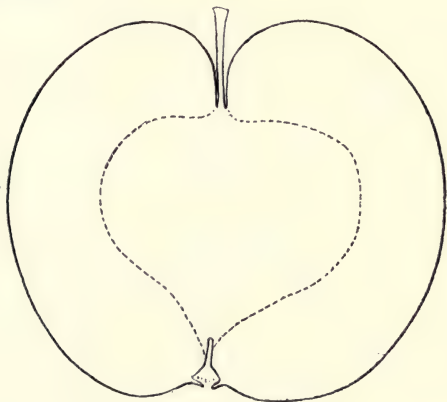


Pewaukee.

Fruit large, roundish, irregular and variable, angular, often ribbed, unequal, sometimes inclined; surface greenish yellow, striped, splashed and marbled with light and dark red overlaid with thin grayish bloom; dots few, large, white, suffused, with russet centres; also many

white, distinct, small dots; cavity very peculiar, often nearly flat, with a large lip or fleshy protuberance against the stem, in others shallow and wavy, with irregular russet patch; stem short, often fleshy at insertion; basin shallow, wavy, ribbed, rather narrow, angular; calyx half open. Core half open, distant, clasping; tube funnel-shaped; stamens median; seeds about twelve, plump, small; flesh yellowish white, with yellow veinings, a little coarse, juicy, sub-acid, good. All winter.

Plumb Cider.—Introduced by the late J. C. Plumb, Milton, Wis. Mr. Plumb, in 1874, said that it was brought from Ohio, in 1844, to Wisconsin by his father—"that the original tree, planted by him in Jefferson County, still stands, a model of form and fruitfulness." Tree vigorous, round-headed, an early bearer, very productive in alternate years.

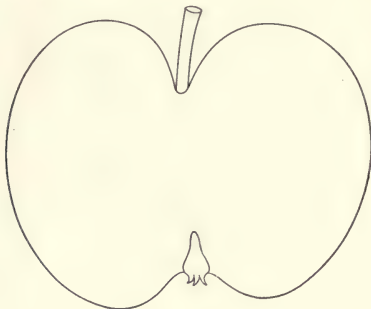


Plumb Cider.

Fruit above medium, roundish oblong, conical, ribbed, angular, sometimes furrowed, unequal; surface greenish yellow, thinly shaded, with light red, with darker bright red splashes and stripes on sunny side; dots minute, white, obscure; cavity acute, narrow; stem short; basin very shallow, narrow, wrinkled, wavy; calyx closed. Core open, clasping, cordate; tube long, very narrow, funnel-shaped;

stamens extremely marginal, touching the segments, a marked characteristic; seeds many, short, plump, pointed; flesh greenish white, firm, fine-grained, juicy, brisk subacid, good. October to January.

Pomme Gris (*Gray Apple*).—Origin unknown, introduced from Canada, but probably of Swiss or French origin; tree of moderate growth but an early bearer.



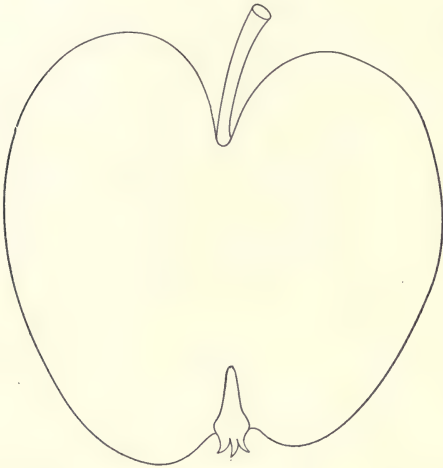
Pomme Gris.

Fruit small; form roundish oblate, regular; surface rough, with thick scaly russet, greenish gray in shade and a deep orange red cheek on sunny side; cavity small, shallow, wide; stem short, slender; basin narrow, shallow; calyx small, open; flesh yellowish, crisp, tender, very juicy, very rich, brisk, highly aromatic, very good to best. December to April.

Porter.—Originated by the Rev. S. Porter, of Sherburne, Massachusetts; tree of moderate vigor, with low, round, spreading head, an abundant bearer.

Fruit medium; form regular, oblong, tapering to calyx; surface glossy bright yellow, with a few dull stripes and splashes; dots very minute, whitish centres and green bases, numerous; cavity regular, acute, trace of russet; stem medium; basin narrow, smooth, or minutely wrinkled, rather shallow; calyx closed; segments divergent. Core wide open, meeting; cells large, abaxile, roomy, elliptical, much slit; calyx-tube conical; stamens basal; seeds rounded, plump,

short; flesh yellow, with yellow veinings, fine-grained, juicy, sprightly subacid, very good. September.



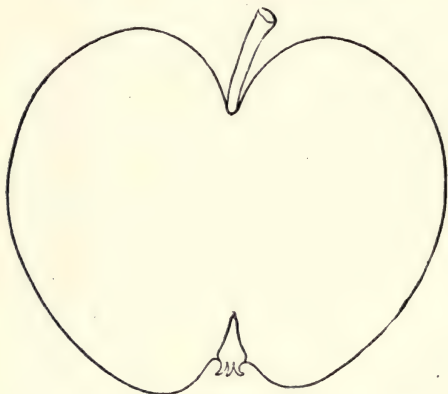
Porter.

Prices Sweet.—Of very strong upright growth in nursery and orchard; subject to sunscald where stem is not protected; popular in parts of the West.

Fruit medium, regular, oblong conical, often unequal; surface yellowish green, mostly thinly covered with mixed and marbled dull red, obscurely splashed and striped; dots large, distinct, numerous, russet, rough; cavity slightly acuminate, deep, regular, with large patch of russet radiating out over base; stem medium to long; basin narrow, corrugated, shallow; calyx closed; segments erect convergent. Core half open; cells abaxile, elliptical; tube funnel-shaped; stamens median; seeds short, plump, few, crowded in cells; flesh yellowish white, moderately juicy, very sweet, good. September and October.

Primate.—Origin unknown; one of the best dessert summer apples for the family orchard; too tender for distant shipment; tree

vigorous, strong, and stocky, and very productive. The fruit ripens in succession, and hence it is better adapted for the home orchard.



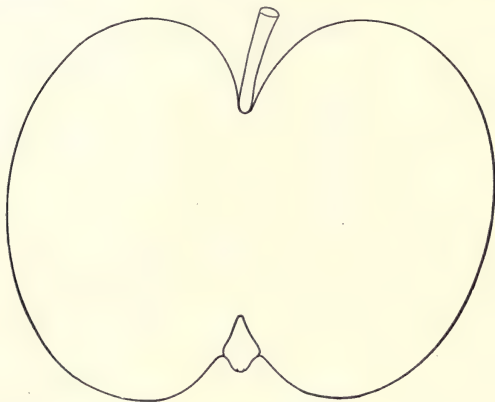
Pimate.

Fruit medium; form roundish oblate, slightly conical, angular, irregular; surface yellowish green, when ripe nearly white, with crimson blush; cavity large, deep, narrow, irregular; stem medium; basin abrupt, somewhat corrugated; calyx small, closed; flesh white, fine-grained, very tender, juicy, sprightly mild subacid, very good to best. August to October.

Prolific Sweeting.—Origin, Russia; a valuable productive sweet apple. In Vermont Dr. T. H. Hoskins found it “the best of the sweet apples for market purposes.”

Fruit above medium, roundish oblate, irregular, obscurely angular; surface polished, smooth, pale yellow, becoming a waxy white; dots white, minute, numerous, a few russet dots; cavity deep, acuminate, ribbed, with some stellate russet; stem short to medium; basin shallow, wide; corrugated; calyx closed; segments erect convergent. Core half open, clasping; cells ovate, slit; tube long, wide, open to core, funnel-shaped; stamens marginal; seeds plump; flesh white, fine-grained, sweet, juicy, very good. August.

Pryor Red.—Origin unknown; popular in Indiana, Kentucky, and Virginia; tree upright, spreading, of moderate vigor, a late and often a shy bearer; doing best on deep rich soil and in southern climates or warm seasons.



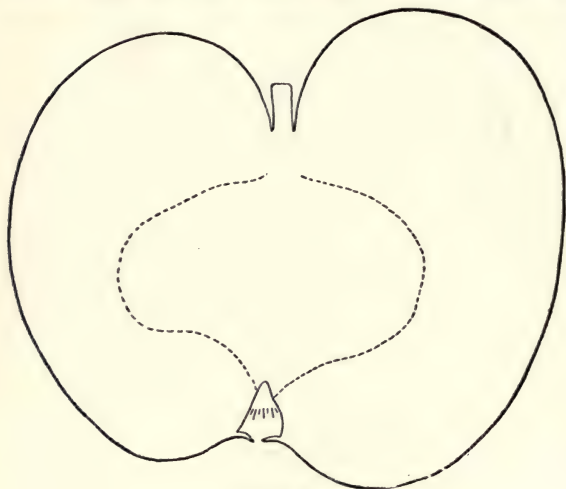
Pryor Red.

Fruit medium or above; form roundish, somewhat oblate, inclined, variable, somewhat ribbed; surface greenish yellow, mostly covered with dull red, with obscure dark crimson stripes and splashes, slightly russeted, sometimes mostly covered with russet; dots numerous, greenish gray; cavity small, narrow, acute, with radiate russet, sometimes extending far out over base; stem short and thick, sometimes long; basin narrow, small; calyx closed; flesh yellowish, very tender and rich, juicy, mild pleasant subacid, very good. January to March.

Pumpkin Sweet (*Pound Sweet*).—Origin, the orchard of S. Lyman, Manchester, Connecticut; tree vigorous, upright, spreading, drooping, productive.

Fruit very large, roundish, obscurely ribbed and angular, sometimes unequal, truncated; surface yellowish green, overlaid with whitish and some russet net-veining; dots distinct, white, minute, a few large russet dots; cavity regular, deep, somewhat acuminate,

with much stellate russet; stem short; basin smooth, shallow, regular; calyx open; segments small, divergent. Core large, closed; cells obovate, widely slit; tube conical; stamens median; seeds few,



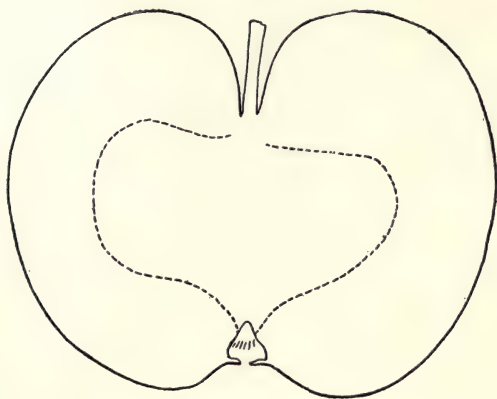
Pumpkin Sweet.

short, blunt, angular, somewhat flattened; flesh white, only moderately juicy, very sweet, good. September to December. Very valuable for baking and stock-feeding.

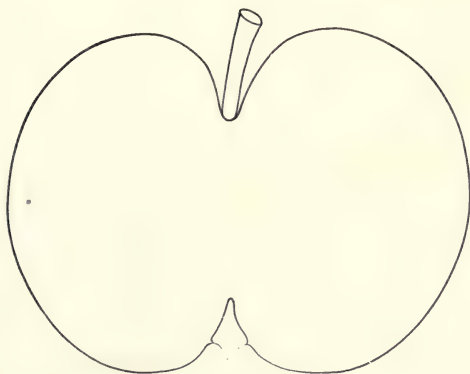
Quince, Cole.—Origin, Maine.

Fruit large; form oblate conical, angular, ribbed toward the base; surface yellow; dots distinct, numerous, russet, with light bases; cavity acute, regular, with large radiating patch of russet; stem short; basin narrow, abrupt, corrugated; calyx closed; segments erect convergent. Core open; cells ovate, slit, roomy; tube conical; stamens median; seeds plump, dark; flesh white, spicy, subacid, good to very good. August in southern Iowa.

Ralls Genet (Janet, Neverfail).—Origin, Amherst Co., Virginia, on the farm of Caleb Rall; tree vigorous, spreading, very productive. It



Quince, *Cole*.

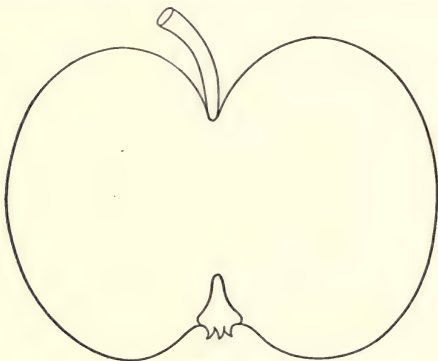


Ralls *Genet*.

puts forth leaves and blossoms much later than other varieties and thus escapes late frosts.

Fruit medium, or above, oblate, conic, regular; surface smooth, yellowish green, striped thinly with dull red, mixed red on sunny side; dots distinct, many, minute, white; cavity regular, acuminate; stem medium, stout; basin wide, smooth, shallow; calyx closed; segments connivent. Core closed, clasping, small; cells axile, ovate, slit; tube funnel-shaped; stamens median; seeds large, flattened; flesh whitish yellow, tender, juicy, sprightly subacid, very good. Late winter and spring.

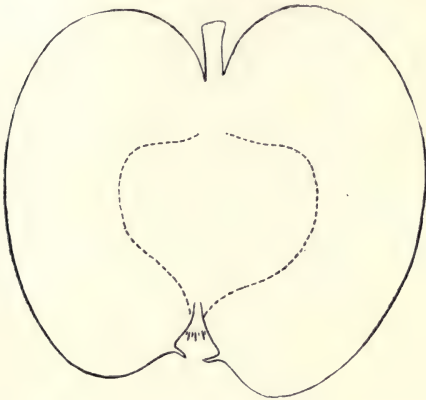
Rambo.—Origin, eastern Pennsylvania; tree vigorous, rather spreading, very productive, shoots dark, with large, light green foliage.



Rambo.

Fruit medium, regular, oblate, large specimens roundish oblate and flattened at ends; surface greenish yellow, with bright red stripes and splashes, coloring sometimes nearly solid on sunny side, with a rich bloom; dots many, small, distinct, some large russet specks; cavity wide, deep, regular, green; stem medium to long; basin wide, shallow, abrupt, slightly corrugated; calyx small, closed. Core open, clasping; cells obovate; tube conical; stamens marginal; seeds many, large, angular; flesh greenish white, tender, delicate, juicy, aromatic, vinous subacid, very good. October to December.

Ramsdell Sweet (*English Sweet*).—Origin, Connecticut; tree vigorous, upright, an early and heavy bearer.



Ramsdell Sweet.

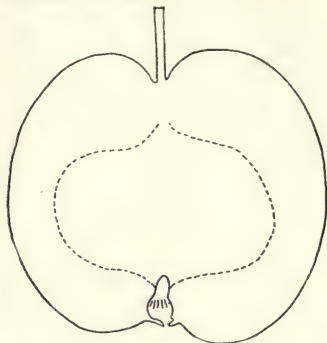
Fruit above medium, regular, oblong, slightly tapering, truncated; surface smooth, yellow, almost wholly covered with solid dark red, with indistinct stripes and splashes, with blue bloom; dots many, large, gray, very conspicuous; cavity regular, deep, acute, with large stellate russet patch; stem short, medium or long, often red; basin narrow, abrupt, nearly smooth; calyx half open; segments erect convergent. Core closed, clasping; cells elliptical, slit; tube funnel-shaped; stamens median or basal; seeds short, plump; flesh yellow, tender, juicy, firm, rich, very sweet, very good. October to February,

Raspberry.—Origin, Russia; exceedingly productive and a good substitute for Red June where that variety winter-kills.

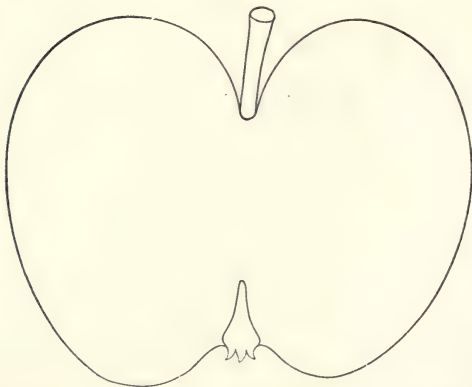
Fruit small, oblong, obscurely angular, somewhat flattened at ends; surface a fine solid dark red (like a highly colored Red June); dots very minute, white, obscure, many; cavity regular, shallow to nearly flat, slightly russeted; stem medium to long; basin nearly flat, with about five prominences around the eye; calyx closed; segments long, reflexed. Core open; cells ovate, slit; seeds about twelve, short,

plump; flesh sprightly subacid, juicy, much stained throughout with the same beautiful color as the skin, very good. July, August.

Reagan.—See Black Ben Davis.



Raspberry.

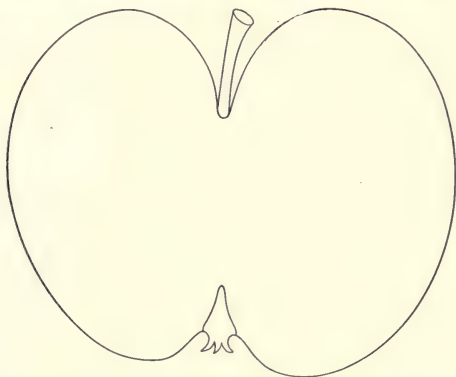


Red Astrachan.

Red Astrachan.—Origin, Russia; first imported into England with the White Astrachan from Sweden in 1816. Tree of vigorous, upright, spreading growth, an early and abundant bearer.

Fruit above medium, roundish, somewhat conical; surface smooth, greenish yellow, almost entirely covered with mottled, marbled and striped deep crimson, with delicate white bloom, a beautiful fruit; dots minute; cavity shallow, regular, obtuse, russeted; stem short; basin shallow, smooth, sometimes a little irregular; calyx small, closed. Core closed, barely clasping; cells open, obovate; tube funnel-shaped; stamens marginal or median; seeds many, angular, plump, small; flesh white, crisp, juicy, brisk acid, good. Late July, early August.

Red Canada (*Steele's Red Winter*).—An old variety of American origin, formerly much grown in New England and other parts of the East; the tree is of irregular, slow growth and productive in most localities, but to overcome its slender growth should be top-grafted on Northern Spy, Tolman, or other strong-growing variety.

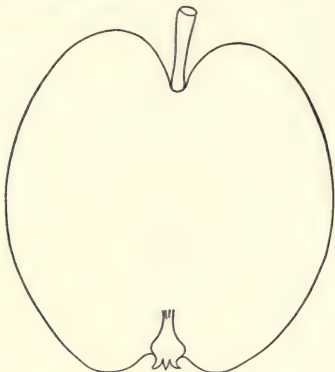


Red Canada.

Fruit medium to large, oblate, slightly conical, obscurely angular; surface smooth, rich yellow, mostly shaded with deep red and crimson, with rather indistinct stripes and splashes on sunny side; dots distinct, many, large, gray and yellow; cavity deep, wide, wavy, russeted; stem short, slender; basin narrow, abrupt, shallow, slightly wrinkled and irregular; calyx small, closed; segments long. Core small, barely clasping, closed; tube conical; seeds imperfect; flesh yellowish white,

crisp, fine-grained, tender, juicy, brisk aromatic, subacid, very good to best. All winter.

Red June, Carolina.—Supposed origin, North Carolina; tree very vigorous, upright, an early and abundant bearer, highly esteemed in many parts of the South and West as the best early market apple; not hardy in northern Iowa.



Red June, Carolina.

Fruit medium or below, roundish oblong, irregular, often unequal, somewhat conical; surface smooth, unctuous, almost wholly shaded with deep solid red, purplish or nearly black red on sunny side with delicate bloom; dots obscure, many, very minute, white; cavity narrow, regular, acute, with slight trace of russet; stem variable; basin narrow, smooth or slightly corrugated; calyx closed; segments long, divergent. Core wide open, rather large; cells elliptical, abaxile, slit; tube funnel-shaped; stamens marginal; seeds numerous, black brown; flesh very white, tender, delicate, juicy, fine-grained, sprightly, agreeable, subacid, very good. July.

Red Queen (No. 316).—Origin, Russia.

Fruit above medium to large, regular, roundish conical; surface greenish yellow, sometimes with dull reddish blush; dots large, white, some with minute dark dot in centre, numerous towards the basin; cavity regular, shallow, obtuse, russeted; stem short, stout;

basin narrow, small, abrupt, wrinkled or wavy; calyx closed. Core closed, distant, barely clasping; tube conical; stamens basal; flesh greenish white with green veinings, sprightly acid, good for culinary use. Winter.

Red Stripe.—Origin, probably Indiana; tree productive, shoots very downy.

Fruit medium or below, oblong conical, obscurely ribbed; surface polished, whitish yellow, mostly covered with striped, splashed, and mottled crimson; cavity acute, regular, russeted; stem short to medium, slender; basin very shallow, corrugated; calyx very small, closed. Core large, open, oval, clasping; flesh white, fine-grained, juicy, tender, pleasant acid, good. July and August.

Red Warrior.—See Mitchell's Red Warrior; an Iowa variety. The name was first given to a North Carolina variety; see also Yates.

Red Wine.—Origin, Russia. Of Lowland *Raspberry* type.

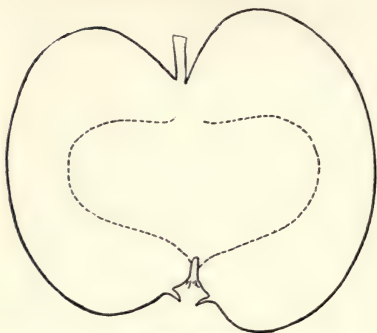
Fruit medium, roundish oblate, irregular, sides often bulging; surface polished, waxen white, almost wholly covered with bright red, a beautiful fruit; dots distinct, numerous, minute, white; cavity regular, narrow, with stellate russet; stem medium; basin shallow, narrow, wrinkled, and corrugated; calyx closed; segments connivent; tube funnel-shaped; stamens median; flesh snow-white, tender, juicy, subacid, good. August, September.

Repka Malenka.—Origin, Russia. Malenka means small. This is probably the best keeper of the Russians. A. G. Tuttle, of Baraboo, Wis., finds that the fruit keep easily till June.

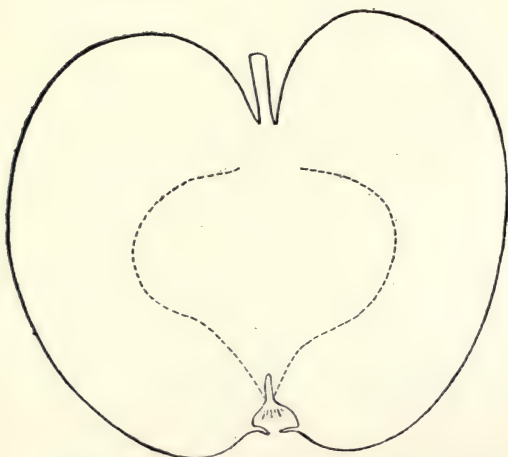
Fruit below medium, conical to roundish conical, obscurely angular, somewhat irregular and unequal; surface yellow, striped, splashed, mixed and dotted dull red on sunny side; dots obscure, few, very minute, white; cavity regular, obtuse, with considerable radiating russet; stem medium to long; basin abrupt, narrow, shallow, slightly corrugated and wrinkled; calyx open or closed; segments erect convergent, very long. Core closed, clasping; cells round; tube funnel-shaped, sometimes linear (long and very narrow); stamens marginal or median; seeds about ten, large, plump, packed tight in the small cells; flesh white, firm, mild subacid, good. Late winter and spring.

Rhode Island Greening.—Origin, Rhode Island; one of the leading eastern varieties; tree very vigorous, of strong, spreading growth, an abundant bearer.

Fruit large, roundish to roundish oblate, often obscurely ribbed;



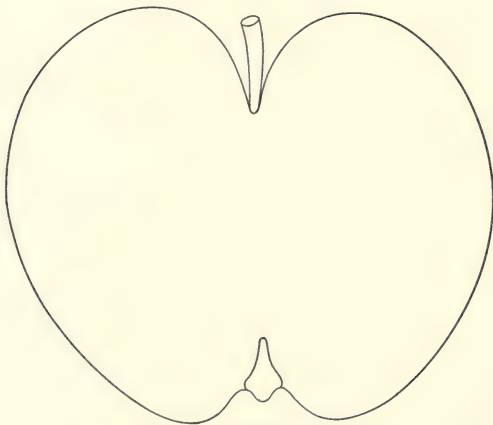
Repka Malenka.



Rhode Island Greening.

surface dark dull green, becoming greenish yellow when ripe, sometimes with faint dull blush, at the south somewhat rough and often russeted; dots many, gray, irregular; cavity wide, regular, deep, obtuse; stem medium to long; basin very shallow, small, nearly smooth, often slightly russeted; calyx small, woolly, closed; segments long, pointed, divergent. Core open; cells, abaxile, ovate, widely slit, with much white exudate; tube funnel-shaped; stamens median or basal; seeds few, angular, pointed, not plump; flesh yellow, fine-grained, tender, very juicy, rich, slightly aromatic, rather acid, very good. November to February.

Ribston (*Ribston Pippin*).—Origin, Ribston Hall, near Knaresborough, England, probably about 1688; highly esteemed in England, but not equal to some other varieties as grown in the Eastern States; tree spreading, productive, an early bearer.



Ribston.

Fruit medium to large, roundish, slightly conical; surface rough, greenish, shaded and striped with dull red on sunny side, with open net-work of russet; dots obscure, gray or russet, few; cavity rather wide, rather shallow, somewhat acuminate, often with large stellate russet patch; stem short; basin abrupt, medium, angular and ribbed,

russeted; calyx closed, small. Core small, distant, barely clasping, closed; cells obovate, axile, slit; tube funnel-shaped, or broadly conical; stamens median or basal; seeds pointed, few, often imperfect; flesh deep yellow, with yellow veinings, firm, crisp, juicy, rich, aromatic subacid, very good. November to April.

Richards Graft.—Originated at Greenport, New York. Downing said "one of the best apples of its season." Cultivated on the Hudson River.

Fruit above medium to large, roundish, regular, truncated; surface smooth, yellow, nearly covered with splashed, striped, marbled, and dotted rich red, overlaid with whitish; dots many, obscure, whitish; cavity wide, deep, obtuse, with much stellate russet; stem long, red; basin abrupt, medium, nearly smooth; calyx small, closed, segments erect convergent. Core half open, small; cells ovate, entire; tube funnel-shaped; stamens median; seeds many, plump; flesh yellowish, white, tender, juicy, fine-grained, rich, pleasant aromatic subacid; very good to best. September and October.

Ridge Pippin.—Supposed origin near Philadelphia, Pennsylvania; tree vigorous, productive.

Fruit rather large, roundish conical, very regular, strongly ribbed; surface yellow, thinly shaded and blushed with red; dots distinct, few, russet and crimson; cavity large, wide, regular; stem short; basin abrupt, furrowed, corrugated; calyx small, closed; flesh yellow, crisp, juicy, mild, aromatic rich subacid, good. Late winter.

Rolfe (Macomber).—Origin, Gilford, Maine; tree vigorous, a good annual bearer.

Fruit medium to large, oblate, angular; surface yellowish, shaded, striped and splashed with red; cavity large; calyx closed. Flesh white, fine-grained, subacid, good. Early winter.

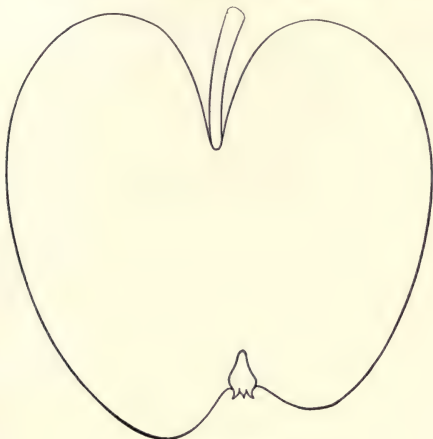
Romanite, South.—Origin unknown; sometimes confounded with Shockley in North Carolina, where it is much grown, but it is quite distinct, also distinct from Gilpin, sometimes known as Little Red Romanite. Tree vigorous, spreading, very productive.

Fruit small, roundish conical, truncated; surface yellow, mostly overspread with clear, light, handsome red; dots obscure, light; stem slender; basin abrupt; flesh yellowish, fine-grained, juicy, mild, pleasant subacid, good to very good. February, April.

Roman Stem.—Origin, Burlington, New Jersey; tree very productive, of moderate vigor, spreading, irregular. One of the hardiest of the

Old eastern varieties for central and northern Iowa; the size and color are against it for market.

Fruit medium or below, roundish, often irregular and unequal; surface smooth, rich yellow, with faint bronze blush, sometimes with patches of russet, and a few reddish specks; dots distinct, many,



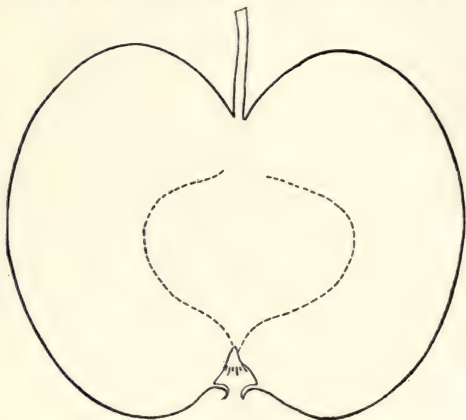
Romanite, South.

russet or green; size variable, mostly small; cavity wide, shallow, obtuse, usually with a large lip or fleshy protuberance against the stem—this is typical of the variety although occasionally absent; stem short; basin narrow, abrupt, wavy, somewhat corrugated; calyx closed; segments erect convergent. Core closed, barely clasping; cells ovate, slit; tube conical; stamens median; seeds many, plump, pointed; flesh yellow, with yellow veinings, tender, juicy, spicy, rich, subacid, excellent. November to March.

Rome Beauty.—Originated in southern Ohio by H. N. Gillett; tree moderate grower, round-headed, very productive, an early bearer, blooms late.

Fruit large, roundish oblate, sometimes slightly conical; surface smooth, pale yellow, mostly covered with mixed bright red, striped

and splashed, a beautiful fruit; dots distinct, many, russet, rather large; cavity wide, obtuse, wavy, lined with greenish russet; stem medium; basin abrupt, smooth, rather shallow; calyx closed; segments erect convergent. Core closed, meeting; cells obovate, entire; tube broad, funnel-shaped; stamens median; seeds long,



Rome Beauty.

plump, pointed; flesh yellow, coarse-grained, tender, juicy, sprightly subacid, good. Early winter.

Romna (No. 599; *Romenskoe*).—Origin, Russia.

Fruit large, very regular, roundish, conical; surface smooth, green, with faint bronze blush; dots distinct, many, large, gray; cavity regular, acute; stem medium, stout; basin narrow, wrinkled, very shallow; calyx closed. Core closed, clasping; tube funnel-shaped; stamens median; flesh white, firm, pleasant subacid, good. Late winter and spring.

Rosenhager.—Imported from Russia.

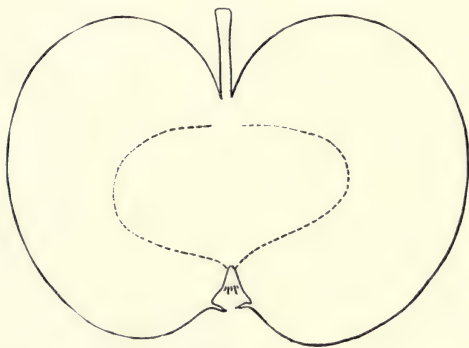
Fruit medium, roundish oblate, somewhat conical, sometimes broadly furrowed; surface yellow, mostly covered with bright rosy crimson stripes and splashes on sunny side, overlaid with whitish net-veining; dots few, obscure, light gray, some distinct with dark

centres; cavity regular, obtuse, deep, with trace of russet; stem short; basin shallow, wide, corrugated and ribbed; calyx small, open; segments divergent. Core open, clasping; cells ovate, abaxile, slit; tube broadly conical; stamens median; seeds flat, often imperfect, long, pointed; flesh white, with faint yellow veinings, fine-grained, crisp, juicy, mild, pleasant subacid, very good. Late winter.

Roxanna.—Origin, Wisconsin.

Fruit medium; conical, irregular, angular; surface yellow, wholly covered with fine crimson and carmine splashes (much like a well-colored Fameuse), a handsome fruit; dots white; cavity regular, slightly russeted, acute; stem short; basin very shallow, narrow, wrinkled; calyx half open. Core closed, clasping, very large; tube short, conical; stamens marginal; seeds very plump, light brown; flesh white, fine-grained, mild subacid, with sweet after-taste, very good. Winter.

Roxbury (*Roxbury Russet*).—Supposed origin, Roxbury, Massachusetts, soon after the settlement of the country. Scions were taken to Connecticut soon after 1649. Tree moderately vigorous, spreading, very productive. Not as popular as formerly for export.



Roxbury.

Fruit medium to large, roundish, oblate, slightly angular; surface green, entirely covered with open net-work of brownish yellow russet, sometimes with a faint blush on sunny side; dots obscure, few, gray,

minute; cavity deep, regular; stem short, rather slender; basin regular, smooth, rather shallow; calyx closed; segments divergent. Core closed; cells ovate, slit; tube conical; stamens median; seed about ten, half abortive, pointed, not plump; flesh greenish white, with greenish yellow veinings, moderately juicy, flavor rich, spicy, subacid, good to very good. January to June.

Russell.—This variety has been traced to the farm of Capt. William Russell, Farmington, Maine, where it was known to be in fruit over sixty-five years ago. The local tradition is that Capt. Russell, an early settler, walked from Massachusetts to his farm and brought in his pockets a lot of apple-seed, and this is one of the seedlings. Tree spreading, an early and regular bearer.

Fruit large, round ovate, sometimes oblong conical, somewhat flattened at base, nearly regular; surface waxen, smooth, except for the raised dots and occasional russet knobs, bright yellow, with red cheek in the sun, obscurely striped; dots brown with light bases; cavity small, regular, narrow, russeted; stem very short and stout; basin regular, deep, abrupt, furrowed; calyx closed; segments erect convergent. Core medium, oval, clasping; seeds few, imperfect, light brown; flesh yellowish, fine-grained, tender, moderately juicy, pleasant subacid, good to very good. September.

There is also a Canadian Russell, described by W. T. Macoun, (Bul. 38, Canada Exp. Sta.) as follows:

"Russell.—Originated in Russell Co., Ontario. Fruit medium to above medium in size, roundish to oblate; skin pale yellow, almost or completely covered with deep red; dots few, gray, not prominent; cavity shallow, open; stem long, slender; basin shallow, open, slightly wrinkled; calyx closed; flesh white, tender, melting, juicy, subacid, with a pleasant flavor, having a suggestion of Fameuse about it, slightly astringent. Core large, quality good. Season, middle of August to middle of September; tree vigorous. Top-grafted on Wealthy at the Central Experimental Farm, it has produced good crops every other year. It ripens unevenly, making it more desirable for home use than for commercial purposes."

Russian Baldwin.—An all-winter Russian apple of commercial value; received from the late Charles Gibb and named by Dr. T. H. Hoskins.

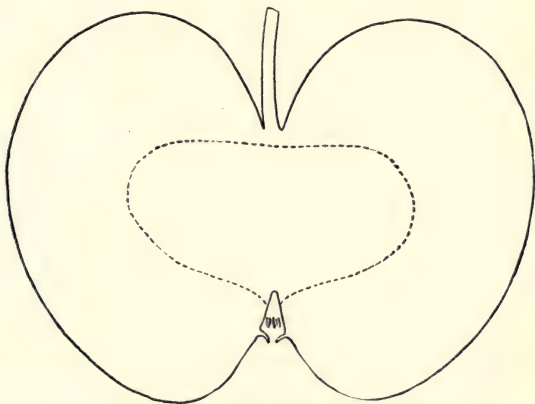
Fruit above medium, roundish oblate; skin thin; surface smooth, yellow, washed with mixed red, splashed and striped with crimson;

dots erupted, russet; cavity medium, irregular, with gradual slope, slightly lipped and somewhat russeted; stem of medium size, short; basin small, regular, shallow, furrowed; calyx small, closed or nearly so; segments short, wide, converging. Core large, wide, partially open, clasping; seeds numerous, small, plump, dark brown; flesh yellowish white, moderately fine, moderately juicy; flavor subacid; quality good. Season late winter. (U. S. Pomologist Report, 1895.)

Saint Johnsbury.—Origin, St. Johnsbury, Vermont; tree a very strong grower, productive.

Fruit medium, round oblate, yellow, mostly covered with dark red or carmine; flesh yellowish, solid, crisp, juicy, pleasant sweet. December to April. (Trans. A. P. S., 1873, p. 92.)

Saint Lawrence.—Of American origin; tree vigorous, upright, productive; valuable, but ripens when there is an abundance of other fruit.



Saint Lawrence.

Fruit large, oblate, somewhat conical, slightly angular; surface smooth, yellowish green, mostly covered with sharply defined carmine splashes and stripes, the sharp contrast between the red and green is a marked characteristic; dots gray, minute, obscure; cavity wide, deep, regular, with faint trace of russet; stem medium; basin

deep, narrow, abrupt, smooth or slightly wrinkled; calyx closed; segments long, erect convergent. Core partially open, clasping; cells obovate, widely slit; tube conical; stamens median; flesh white, often slightly stained with pink, crisp, tender, juicy, vinous subacid, good to very good. September to October.

Salome.—Originated with Elias C. Hathaway, Ottawa, Illinois; tree a strong, upright grower, very productive.

Fruit medium or below, roundish conical, somewhat angular; surface greenish yellow, washed, splashed and striped with bright red overlaid with whitish; dots distinct, many, whitish, large, a few russet dots; cavity deep, regular, obtuse, with some stellate russet; stem medium to long, stout; basin shallow, nearly smooth, a few minute wrinkles; calyx closed; segments erect convergent. Core large, open, barely clasping, sessile; cells ovate, axile, entire; tube conical; stamens basal; seeds fourteen to nineteen, large, flattened; flesh yellow, crisp, tender, sprightly, subacid, good. Late winter.

Saxton (*Fall Stripe*).—An old variety of Massachusetts or Connecticut origin; is also raised in parts of the West; tree vigorous, round-headed, an early bearer, very productive alternate years.

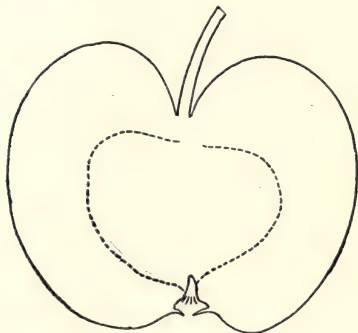
Fruit medium, roundish, truncated, somewhat irregular and obscurely ribbed; surface greenish yellow, thinly washed with light red, with distinct dark red stripes and splashes, mixed red on sunny side; dots minute, white, obscure; cavity acute, slightly russeted; stem medium to long; basin wide, shallow, often flat, ribbed and wrinkled; calyx closed; segments erect convergent. Core wide open, meeting or barely clasping; cells round, roomy, abaxile, slit; tube funnel-shaped; stamens median; seeds many, short, plump, easily loosened so as to rattle when shaken; flesh yellowish, juicy, tender, mild subacid, good to very good. September.

Scarlet Pippin (*Leeds Beauty*).—Originated at Lyn, Leeds Co., Ontario, near Brockville. A choice variety of the Fameuse type recently introduced. Tree of strong, upright growth, productive.

Fruit medium, regular, oblate to roundish oblate; surface smooth, waxen, yellow, almost wholly covered with brilliant bright and dark crimson, washed and splashed, coloring solid on sunny side, with thin, light bloom; a beautiful fruit; dots distinct, many, minute, white; cavity deep, regular, wide, obtuse with trace of stellate russet; stem short; basin nearly flat, smooth; calyx open; segments divergent. Core closed, small, meeting; tube conical; stamens median; seeds

plump, short, few; flesh very white, slightly stained with pink, fine-grained, crisp, melting, tender, juicy, subacid, very good. Early winter.

Scott Winter.—Origin, Vermont; introduced by Dr. T. H. Hoskins. Tree a strong, upright grower; an annual and good bearer. Promising at the North.



Scott Winter.

Fruit medium or below, roundish oblate, conical, somewhat angular; surface a rich yellow, heavily washed with red, with indistinct dark stripes and splashes and some open russet net-veining, giving the fruit a peculiar marbled, dark orange-red color; cavity regular, deep, obtuse with stellate russet; stem short; basin narrow very abrupt, slightly wrinkled or wavy; calyx closed; segments erect convergent. Core closed, clasping; cells round; tube conical; stamens median; seeds eight to ten, short, plump; flesh yellow, fine-grained, juicy, crisp, pleasant, sprightly acid, good; use chiefly culinary. Late winter.

Schroeder (*Tuttle's Charlamoff*; *the upright Charlamoff*).—Received from Russia under the name of Charlamoff, but the tree is of upright habit and fruit very distinct from that variety. The above name was given by the Russian Nomenclature Commission in 1898.

Fruit large, roundish oblate, flattened at ends, regular; surface handsomely colored much like Oldenburg, splashes broad, bright, distinctly defined; dots obscure, gray, few, very minute; cavity deep,

wide, regular, with much stellate russet; stem short; basin medium, somewhat corrugated and minutely wrinkled; calyx open. Core half open; cells round or roundish ovate, entire; tube long, wide, funnel-shaped, open to core; stamens marginal; seeds short, plump; flesh white, juicy, acid, good. September.

Seevers.—Grown to some extent in central Iowa.

Fruit above medium to large, roundish conical, very regular; greenish yellow with large bronze blush; dots obscure, minute, russet, with gray bases, a few large gray specks; cavity regular, deep, acute, lined with stellate russet; stem short; basin flat, narrow, smooth or slightly wrinkled; calyx open; segments very small, erect or flat convergent. Core closed, barely clasping; cells round, slit, axile; tube conical, small; stamens median; seeds about eight, short, plump, rather large; flesh moderately juicy, rich mild acid, good. Midwinter to spring.

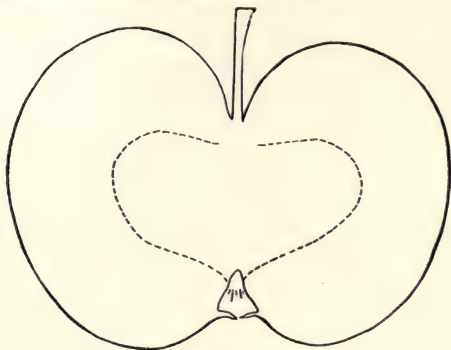
Sheriff (*American Beauty*, incorrectly).—Brought from Pennsylvania many years ago by James Sheriff—hence its name, the original name having been lost. Tree quite hardy in parts of the West. Tree vigorous, of tall, open, somewhat spreading, symmetrical habit, with few branches; a good annual and early bearer.

Fruit medium, roundish, somewhat cylindrical, flattened at ends, nearly regular; surface pale greenish yellow, nearly covered with light and dull dark red, with obscure carmine stripes and splashes; dots many, minute, distinct, whitish; cavity very narrow, acuminate, regular, green and russeted; stem medium to long, slender, deeply inserted; basin wide, shallow, wavy, or slightly ribbed; calyx closed; segments erect convergent. Core closed; cells ovate, slit, very large; tube funnel-shaped; stamens median; seeds few to many, plump, pointed; flesh whitish, juicy, tender, mild pleasant subacid, not rich, good. December, February.

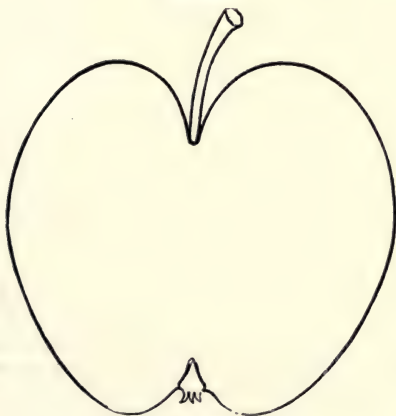
Shiawassee (*Shiawassee Beauty*).—Originated in Shiawassee Co., Mich., one of the best varieties of the Fameuse type; tree a strong, moderately upright grower; a heavy bearer in alternate years.

Fruit medium, very oblate, regular; surface polished, yellow, almost wholly covered with brilliant dark crimson, with obscure splashes; dots distinct, few, large, yellow; cavity obtuse, wide, regular, with stellate russet; stem medium; basin smooth, wide, shallow; calyx closed or open; segments divergent. Core half open, meeting; cells ovate, slit; tube conical; stamens median or basal;

seeds few, plump, pointed; flesh firm, very white, tinged with red, brisk, pleasant subacid, very good. Early winter.



Shiawassco.

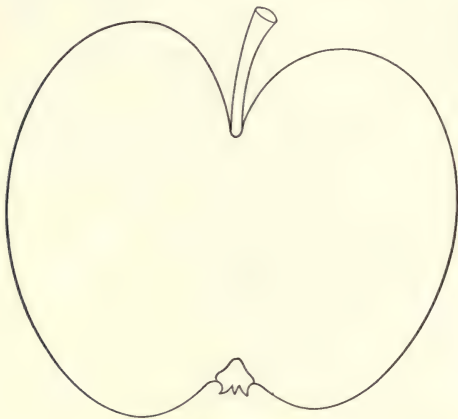


Shockley.

Shockley.—Origin, Jackson Co., Georgia, a popular variety at the South; tree vigorous, upright, an early and very abundant bearer.

Fruit small to medium, conical, truncated, regular; surface very smooth, pale waxen yellow, mostly covered with marbled and blushed bright red and crimson; dots few, obscure, minute, gray; cavity deep, acute, regular, slightly russeted; stem slender, long; basin shallow, corrugated, narrow; calyx small, half open. Core closed, meeting; tube conical; stamens median; seeds many, plump; flesh yellow, fine-grained, juicy, crisp, rich, saccharine subacid, very good. March, June.

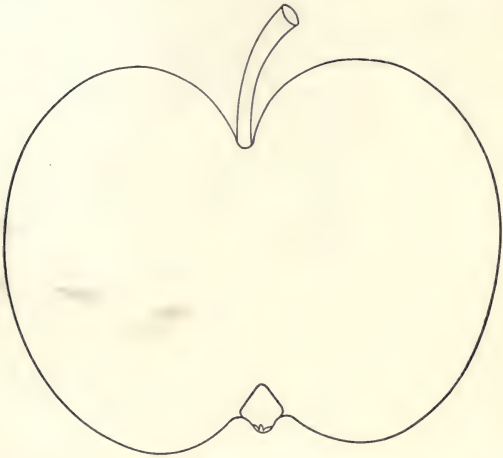
Smith Cider.—Origin, Bucks Co., Pennsylvania; tree very vigorous, straggling, spreading grower, an early and good bearer.



Smith Cider.

Fruit medium to large, varying from roundish oblate conical to somewhat elongated, sometimes unequal; surface smooth, pale yellow, shaded with red, with indistinct bright crimson splashes; dots few, distinct, gray, large; cavity deep, acute, narrow, russeted; stem medium to long, slender; basin wide, shallow, sometimes corrugated; calyx small, half open; segments long. Core open, clasping; seeds many, plump, pointed; flesh whitish, tender, juicy, crisp, aromatic, mild subacid, not rich, good. Late winter.

Smokehouse.—Origin, Pennsylvania; tree of moderately vigorous spreading growth, productive.



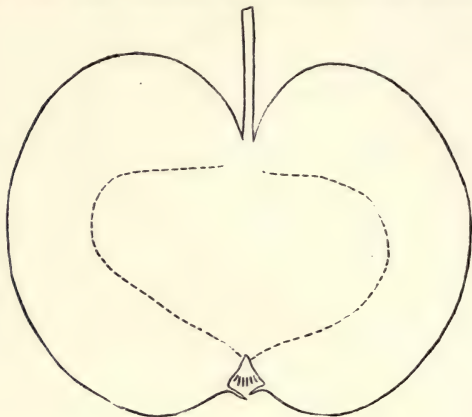
Smokehouse.

Fruit rather large, roundish oblate, regular; surface yellow, shaded, mottled, and obscurely splashed with red and crimson; dots few, large, gray and brown; cavity wide, acute; stem rather long, slender, curved; basin wide, medium deep, slightly corrugated; calyx closed; flesh yellowish white, firm, rich, juicy, crisp, aromatic subacid, good. September to February. .

Sops of Wine.—An ancient English variety; tree vigorous, upright, spreading, an early and abundant bearer.

Fruit medium, round, slightly conic, regular; surface smooth, unctuous at maturity, rich yellow, almost or wholly covered with rich dark red, mixed and shaded, with heavy darker stripes and splashes overlaid with thin white bloom, a handsome fruit; dots distinct, many, gray and yellow; cavity obtuse, wavy, slightly russeted; stem long; basin wide, smooth, shallow; calyx closed; segments long, broad, connivent. Core closed, meeting, core outline red; cells round,

axile, slit; tube conical; stamens median or marginal; seeds large, pointed, few; flesh yellowish white, stained with red, fine-grained,



Sops of Wine.

moderately juicy, mild, pleasant subacid, good to very good. Late July, early August, in central Iowa.

Speer.—A stray variety in some scions of another variety received from Russia. Named in honor of R. P. Speer, Cedar Falls, Iowa, by the Iowa State Horticultural Society.

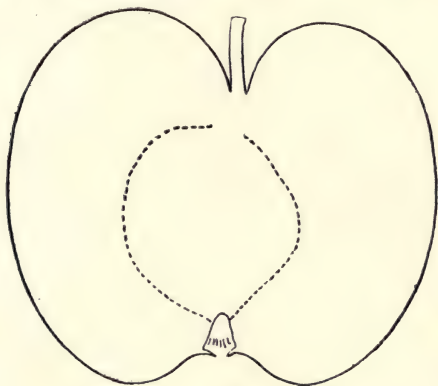
Fruit above medium to large, roundish, somewhat oblate, regular; surface rich golden yellow, remarkable for the numerous minute prominences and raised dots; dots obscure, many, minute; cavity regular, obtuse, slightly russeted; stem medium, stout; basin smooth, wide, deep, very abrupt, forming a cup with a few prominences in bottom; calyx closed; segments erect convergent, very large and leafy. Core closed, clasping; cells axile, ovate; tube funnel-shaped; stamens marginal; flesh white, juicy, crisp, sprightly acid, good. Late fall.

Springdale.—Origin, Arkansas; of recent introduction.

Fruit medium, roundish oblate, slightly conical, regular; surface yellow almost or wholly covered with fine dark solid red, obscurely

splashed dark crimson, some small russet patches; dots distinct, many, russet, raised; cavity regular, medium, obtuse, lined with stellate russet, stem medium, stout; basin rather shallow, slightly corrugated; calyx open; segments small, flat convergent. Core half open, clasping; cells round; tube long, funnel-shaped; stamens marginal; seeds plump, pointed, packed closely in cells; flesh yellowish white with greenish tinge, firm, very solid, mild pleasant subacid, good. Late winter.

Stark.—Origin unknown, probably Ohio; tree vigorous, upright, spreading. A commercial variety.



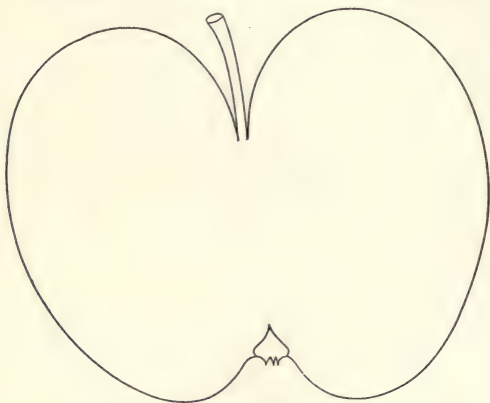
Stark.

Fruit, large, roundish, slightly conical, sometimes a little elongated and oblique; surface smooth, unctuous at maturity, yellowish green, mostly covered with light and dark red, shaded, striped, and splashed, overlaid with whitish; dots many, distinct, brown and whitish, some areolar; cavity regular, obtuse, slightly russeted; basin shallow, slightly wrinkled; calyx closed. Core open, small, *outline irregular*, meeting; tube obtusely conical; stamens marginal or median; flesh yellowish, a little coarse, moderately juicy, mild subacid, good. Late winter.

Starkey.—Origin, Maine; tree hardy, vigorous, spreading, productive, a regular bearer.

Fruit medium, oblate, slightly conic, regular; surface pale yellow, shaded, striped and splashed with light and dark bright red; dots few, light and gray; cavity medium, sometimes slight russet; stem short, small; basin medium, slightly corrugated; calyx closed or nearly so. Core small; flesh whitish, half fine, tender, juicy, mild pleasant subacid. October, January.

Stayman Winesap.—A seedling of the Winesap, originated with Dr. J. Stayman, Leavenworth, Kansas. We give his description:



Stayman Winesap.

“Tree very vigorous, open, irregular, spreading; wood very dark; dark heavy foliage; an early and very abundant bearer; tree much in appearance like Winesap; fruit hangs well on the tree.

“Fruit medium to large, heavy, oblate conical, regular; greenish yellow, mostly covered and indistinctly splashed, mixed and striped with dark dull red; dots medium, numerous, distinct gray; stem of medium length, slender; cavity wide, deep, much russeted, extending, regular; calyx large, open, or half open, erect, large; basin rather narrow, abrupt, deep, furrowed. Core medium; flesh yellow, firm, tender, juicy, rich, mild subacid, aromatic; quality best. Season, January to May.”

Stephenson (*Stephenson's Winter*).—Origin, Marshall Co., Mississippi; tree of moderate growth, productive.

Fruit medium, roundish oblate, greenish yellow, shaded, and sometimes striped with red; stem long, slender; calyx open. Core small; flesh whitish, rather firm, juicy, pleasant, brisk subacid, good. January to April.

Sterling (*American Beauty*).—Origin, Sterling, Massachusetts; tree vigorous, productive, an annual bearer.

Fruit large, roundish, slightly inclining to conic, obscurely ribbed; surface a yellow ground, mostly covered with red, which is quite dark in the sun; dots numerous, small, light and brown; cavity medium, with radiating russet, the rays sometimes extending out over a portion of the fruit; stem rather short, somewhat slender; basin medium, uneven; calyx small, closed; segments medium, slightly recurved. Core small; flesh yellowish, rather compact, tender, juicy, rich, mild subacid, aromatic, very good. December to April.

Striped Gilliflower.—Origin unknown. Distinct from Scollop Gilliflower; the two varieties were formerly considered identical.

Fruit variable in size and form, size large to very large; in form varying from roundish conical to oblong conical (about half of each, one grower reports), irregular, angular, often furrowed; surface light greenish yellow, thinly striped with dull red on sunny side; dots very obscure, few, minute, white; cavity deep, acute, with stellate russet; stem short; basin shallow with a few sharp minute ridges; calyx closed or half open; segment erect convergent. Core wide open, sessile, barely clasping; cells abaxile, elliptical, much slit with broad ridges of cellular exudate; tube conical; stamens median; seeds few, small, nearly round, very blunt; flesh whitish, juicy, crisp, brisk subacid, fair to good. September.

Summer Bellflower (of Pennsylvania).—Origin unknown. Distinct from the Summer Bellflower of New York.

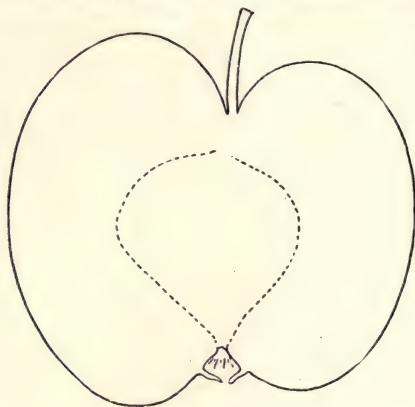
Fruit large, oblong conic, much like Yellow Bellflower; surface a clear waxen yellow deepening to rich golden yellow on sunny side; dots few, minute, distinct, russet; cavity deep, wide, acute, regular, with stellate russet patch; stem short; basin narrow, very shallow, ribbed and corrugated; calyx closed; segments erect converging. Core wide open, meeting; cells elliptical, very roomy, slit; tube conical; stamens median; seeds about twelve, short, plump; flesh yellow, with

yellow veinings, fine-grained, rich, spicy, mild subacid, very good. Last of August and early September.

Summer King.—An old variety; supposed origin, North Carolina, popular in Kentucky; tree upright, moderate grower, productive alternate years.

Fruit medium to large, roundish oblate; surface yellowish green, striped with crimson, red and orange; cavity large, deep, russeted; stem short; basin medium, regular; calyx closed. Core small; flesh whitish, yellow, fine, brittle, juicy, mild agreeable subacid. August, September.

Summer Pearmain (*American Summer Pearmain*).—Of American



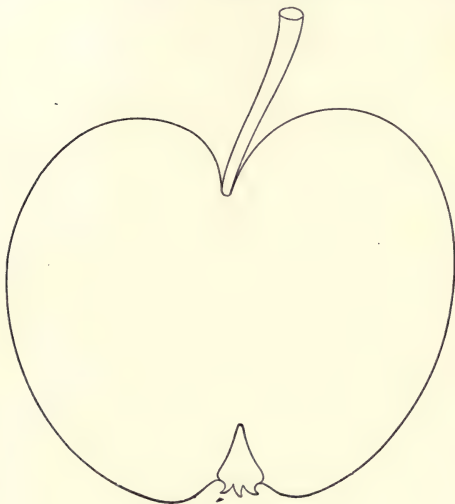
Summer Pearmain.

origin; of slender, slow growth in nursery, in orchard large, round-headed, productive.

Fruit medium, regular, roundish oblong, slightly tapering, very regular; surface greenish yellow, covered with mixed and marbled red, obscurely splashed and streaked with brighter red on sunny side; dots russet and gray, many, obscure, minute; cavity regular, obtuse, some stellate russet; stem long, slender; basin shallow, smooth, abrupt, very regular; calyx nearly closed; segments flat convergent. Core closed, small, roundish, meeting, distant; cells

elliptical, entire; tube conical; stamens basal; seeds plump, rounded, short; flesh yellow, very tender, pleasant, rich, aromatic, juicy, sub-acid, best. August and September.

Summer Queen.—Of American origin; tree vigorous, large, spreading, with somewhat pendent boughs, productive.



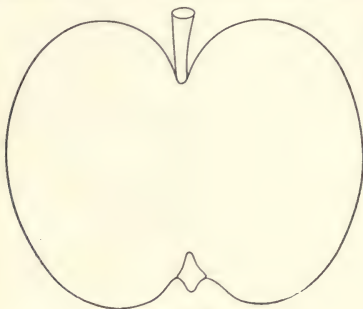
Summer Queen.

Fruit large, roundish conical, somewhat angular and ribbed; surface fine deep yellow, mostly covered with clouded and mixed red, with bright red splashes and stripes; dots minute, yellow; cavity, acute, regular, rather deep, russeted; stem long, slender; basin narrow, flat, or very shallow, plaited; calyx medium, closed. Core medium, open; seeds many, pointed; flesh yellow, firm, very aromatic, rich, rather acid, excellent for cooking. August, September.

Summer Rose.—Origin, New Jersey; tree vigorous, spreading, productive, an early bearer.

Fruit rather small, roundish oblate, regular; surface smooth,

polished, clear rich pale waxen yellow, with distinct bright red and crimson stripes and splashes on sunny side; dots minute; cavity regular, acute; stem rather short, slender; basin abrupt, wide, nearly smooth; calyx small, closed. Core large, closed, meeting; seeds many, short, plump; flesh white, very tender, fine-grained,



Summer Rose.

very juicy, sprightly subacid, excellent. June to early August, ripening in succession.

Sutton (*Sutton Beauty*).—Origin, Sutton, Massachusetts, thought to be a seedling of Hubbardston, but of more attractive appearance; tree upright, thrifty, very productive.

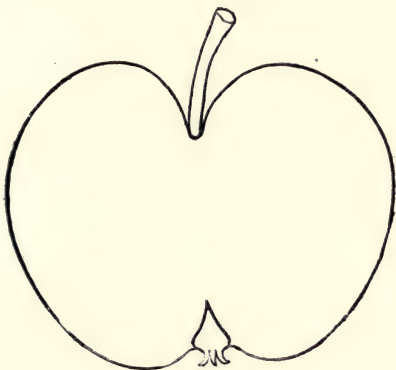
Fruit above medium to large, roundish oblate conical; surface smooth, waxen yellow, mottled, washed and shaded crimson, with obscure carmine splashes and stripes; dots few, large, whitish, and russet, distinct; cavity deep, wide, with greenish russet; stem rather short; basin shallow, abrupt, slightly wrinkled; calyx half open; segments divergent. Core medium, oblate, closed, clasping; seeds many, pointed, angular; flesh whitish, crisp, tender, juicy, sprightly subacid, good to very good. Midwinter.

Swaar.—Originated by the Dutch settlers on the Hudson River, near Esopus, New York; the name in Low Dutch means heavy, alluding to its unusual weight; a deep, rich, sandy loam is required for its best development; tree vigorous, spreading, productive.

Fruit medium to large, roundish to roundish oblate, mostly regular, often obscurely angular; surface roughened by dots and sometimes

with gray russet net-veining, greenish yellow, with bronze or red blush, at full maturity a fine dead golden yellow; dots many, very large, conspicuous, light russet; cavity regular, narrow, often russeted, sometimes nearly closed; stem long, slender; basin almost flat, smooth, or faintly wrinkled; calyx open; segments flat convergent. Core closed, clasping; tube funnel-shaped; stamens marginal; cells roundish ovate, slit; seeds many, plump, pointed; flesh yellowish, very heavy, fine-grained, very rich, aromatic, very mild subacid, and spicy fragrance, very good to best. December to March.

Swazy Pomme Gris (*Pomme Grise d'Or*).—Supposed origin near Niagara, Ontario, Canada; tree is moderately vigorous, upright, good



Swazy Pomme Gris.

bearer in alternate years; fruit more oblong, of richer yellow and more aromatic than the *Pomme Grise* and is considered superior to it.

Fruit small to below medium, oblate to roundish; surface deep yellow, nearly covered with a thin light brownish gray russet; dots many, distinct, but not conspicuous; cavity deep, narrow; stem short to long, slender; basin narrow, deep, slightly corrugated; calyx half open. Core small; flesh pale greenish yellow, fine-grained, tender, juicy, aromatic, rich, sprightly subacid, very good to best. January to April.

Sweet Longfield (20 M.).—Origin, Russia; an excellent late summer sweet apple, following Smoky Arcad and Beautiful Arcade in season. The original name, Kursk Reinette, was changed to Sweet Longfield by Prof. Budd, and this was adopted by the Russian Nomenclature Commission.

Fruit large, regular, oblong conic, somewhat truncated; surface greenish yellow, often with faint blush on sunny side; dots minute, white, obscure, numerous, slightly raised; cavity regular, acute, slightly russeted; stem medium; basin small, abrupt, slightly wrinkled; calyx closed; segments small. Core regular, clasping, open; cells large; tube conical; stamens median; seeds small, plump; flesh white, fine-grained, rich, sweet, very good for table or baking. August.

Sweet Wealthy.—Originated from seed of Wealthy, in 1874, by O. M. Lord, Minnesota City. Lord's Longfield came from the same lot of Wealthy seeds; others of these Wealthy seedlings produced "the sourest apples I ever tasted." (Mr. Lord.) No sweet varieties were within range of the parent tree. Sweet Wealthy is an excellent fall sweet apple, worthy of attention.

Fruit medium, roundish, often unequal; surface greenish yellow, thinly washed and obscurely splashed with dull red overlaid with whitish; dots distinct, many, gray, minute; cavity regular, narrow, obtuse, with stellate russet; stem medium, fleshy, stout; basin flat, corrugated; calyx closed; segments erect convergent. Core closed, rounded, clasping; cells ovate, slit; tube funnel-shaped; stamens marginal; seeds about ten, rather large, plump, pointed; flesh white, fine-grained, juicy, pleasant, sweet, very good. September and October.

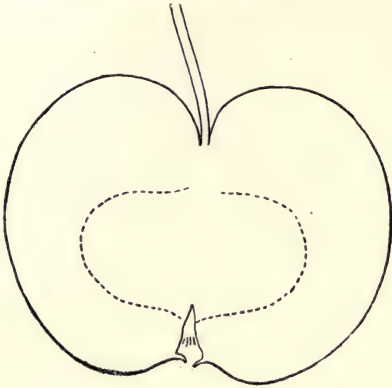
Sweet Winesap.—Origin, Pennsylvania; tree of moderate, upright growth, productive.

Fruit medium, oblate, slightly approaching conic; surface red, splashed with deep crimson; cavity deep, russeted; stem long, slender; basin rather deep, open; calyx partially open. Flesh tender, juicy, very sweet, rich, good to very good. November to March.

Switzer.—Origin, Russia.

Fruit medium, oblate, regular; surface light yellow, almost or wholly covered with bright crimson; dots white, few, obscure; cavity regular, somewhat acuminate, russeted; stem long; basin wide, shallow, nearly flat, corrugated; calyx closed. Core half open, clasp-

ing; tube funnel-shaped, open nearly to core; stamens median; flesh snow-white, firm, fine-grained, rich, spicy, mild subacid, with sweet after-taste, very good. September, October.



Switzer.

Taunton.—Origin unknown; some claim it for Alabama, others Georgia; tree a vigorous but straggling grower, very productive.

Fruit rather large, oblate conic; surface greenish yellow, striped and splashed with red, darkest on sun side; dots large, light; cavity deep, russeted; stem slender; basin slightly corrugated; calyx closed; segments long, slender; flesh whitish, tender, juicy, aromatic, acid; good. September, October.

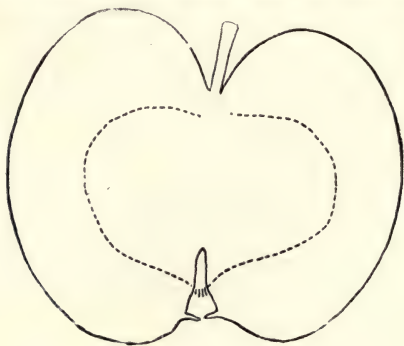
Terry Winter.—Origin, Clayton Co., Georgia, some twenty-five miles south of Atlanta; tree moderately vigorous, of rather slender open growth, with abundant healthy foliage; an early and heavy annual bearer. Prof. H. N. Starnes, of Georgia Experiment Station, reports it valuable for the South, owing to its very late keeping, good quality, and extreme productiveness; its faults are its want of size, produced by its tendency to overbear, and its too firm texture in early winter.

Fruit medium or below, oblate, regular; surface a clear light yellow, mostly covered with fine dark red, with carmine splashes and stripes; dots distinct, many, minute, yellow, some large russet dots;

cavity regular, obtuse, often russeted; stem medium; basin smooth, wide, shallow or medium depth; calyx closed; segments flat convergent. Core closed; cells ovate, axile; tube funnel-shaped; stamens marginal; seeds few, short, plump; flesh yellow, fine-grained, firm, juicy, mild, pleasant, saccharine, subacid, very good. Late winter and spring, even keeping till July.

Tetofsky (*Tetofski*).—Origin, Russia; tree hardy, very upright, an early annual bearer. Dowling's spelling *Tetofsky* is usually preferred to Warder's version *Tetofski*.

Fruit medium or below, oblate to roundish oblate, somewhat conical, angular; surface smooth, yellow, striped and splashed with bright crimson, marbled and mixed on sunny side, overlaid with heavy whitish bloom, a handsome fruit; cavity wide, obtuse, regular; stem short to medium; basin shallow, much corrugated and ribbed;



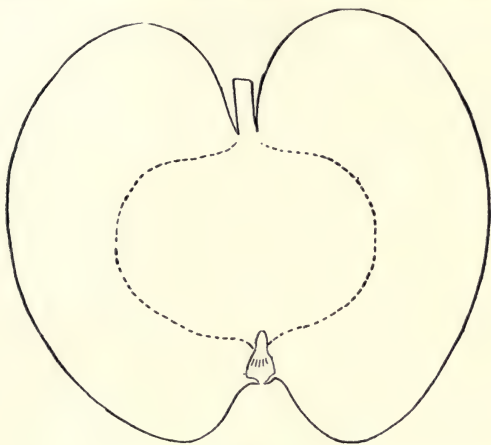
Tetofsky.

calyx closed; segments large. Core large, closed, clasping; cells ovate or round, slit; tube broad, long, funnel-shaped; stamens median; seeds plump; flesh white, juicy, sprightly acid, good. August.

Titovka (*Titus Riga*).—Origin, Russia. A large, beautifully colored apple, following Oldenburg in season.

Fruit large, oblong, truncated, regular; surface smooth, very unctuous, yellow, mostly covered with fine marbled red, with carmine splashes and stripes; dots minute, white, obscure, few; cavity very

deep, acute, yellow; stem very short; basin deep, very abrupt, with corrugations in bottom; calyx closed; segments small, erect con-



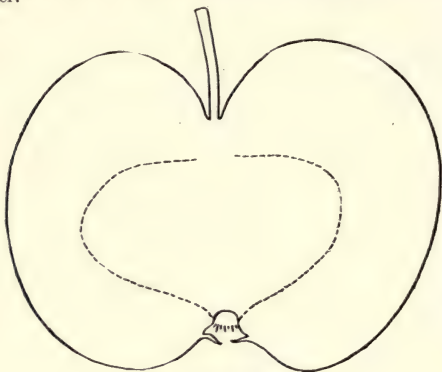
Titovka.

vergent. Core wide open, sessile, clasping, roundish oblate; cells obovate, roomy, widely slit; tube funnel-shaped; stamens median; seeds few, short, plump, several minute imperfect seeds; flesh yellow, juicy, subacid, good. September, October.

Tolman Sweet (*Tallman Sweet*).—Origin, Rhode Island; tree vigorous, upright, spreading, very productive. One of the hardiest of the old eastern apples in the western prairie region.

Fruit medium or above, nearly globular; surface whitish yellow, often with faint blush on sunny side, usually a distinct dark line or pin-scratch runs from stem to calyx; dots few, gray, minute, rather obscure, some with whitish bases; cavity rather wide, obtuse, medium deep, regular; stem long, slender; basin small, shallow, wrinkled. leather-cracked; calyx small, closed or half open; segments erect convergent. Core closed; cells ovate, slit; tube funnel-shaped; stamens median; seeds short, plump; flesh white, firm, moderately

juicy, fine-grained, rich sweet, quality very good for a sweet apple. All winter.



Tolman Sweet.

Tompkins King (*King of Tompkins County*).—Supposed origin Essex Co., New Jersey, but was first noticed as a heavy bearer in Tompkins Co., New York, in 1838; tree very vigorous, large, spreading, an annual bearer, moderately productive usually. A favorite for export as it keeps well and stands shipment well.

Fruit large, globular, inclining to conical, sometimes roundish oblate, angular; surface deep rich yellow, mostly covered with shaded and dotted bright red, with dark crimson stripes and splashes; dots distinct, numerous, light russet, large; cavity large, often irregular, obtuse, yellow, with trace of russet; stem long or short, stout or slender; basin narrow, shallow, smooth, or slightly wrinkled; calyx small, closed; segments erect convergent. Core closed, meeting, large, sessile, turbinate; cells elliptical, widely slit, with much exudate; tube funnel-shaped; stamens basal; seeds few, about half imperfect, large, long; flesh yellow, juicy, rather coarse, tender, rich, vinous, very agreeable subacid, very good to best. December to March.

Townsend.—Found by Stephen Townsend, over one hundred years ago, in an Indian clearing in Bucks Co., Pennsylvania; tree vigorous, upright, spreading, productive.

Fruit rather large, oblate, slightly conic; surface pale yellow,

striped and splashed with red, with thin bloom; cavity medium; stem rather long, slender; basin rather shallow, slightly ribbed; calyx closed; flesh white, fine-grained, tender, very mild, agreeable subacid, good to very good. Middle of August to middle of September.

Trenton Early.—Origin unknown; first brought to notice in Ohio in 1852, where it was introduced many years previously by Silas Wharton; tree vigorous, productive.

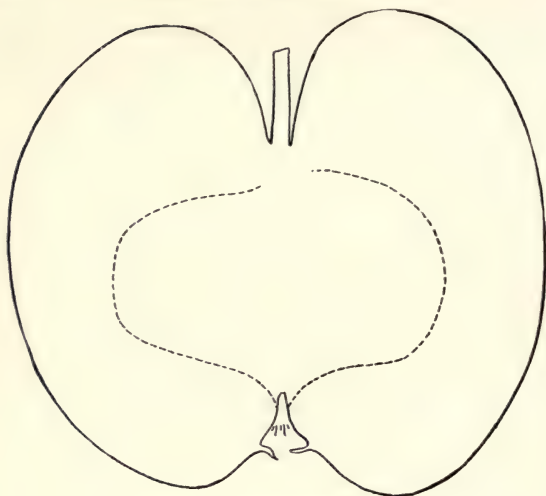
Fruit large, conical, angular, and ribbed; surface smooth, unctuous, yellowish white, with slight green undulations; dots few, minute; cavity wide, regular, russeted; stem medium; basin narrow, furrowed; calyx rather small, closed. Core large, partially open; seeds many, angular; flesh white, very light and tender, juicy, pleasant subacid, very good. August, September.

Tuttle.—Originated on farm of Lyman Tuttle, Hamden, Connecticut; tree upright, vigorous, an early and abundant bearer in alternate years, valued in its locality for market and home use.

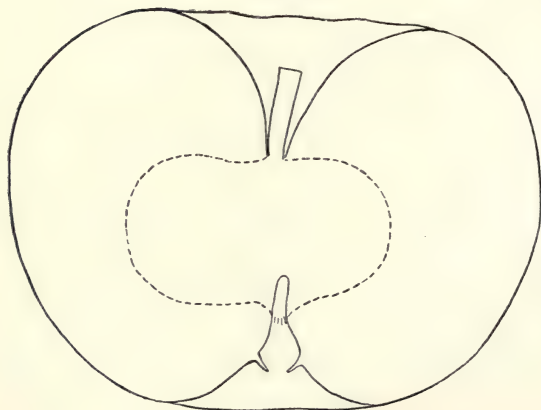
Fruit above medium to large, roundish conic, sometimes unequal; surface pale yellow, shaded with a light red, with dark red stripes and splashes; dots distinct, many, very large, gray, russet, many coalescent, forming large russet patches; cavity regular, obtuse, often with large patch of russet radiating out over base; stem short; basin narrow, very shallow; calyx closed; segments flat convergent. Core wide open, medium, meeting; cells elliptical, entire; tube conical; stamens marginal; flesh whitish, tender, juicy, mild pleasant subacid, very good. December, March.

Twenty Ounce (*Cayuga Red Streak*).—An old variety from Connecticut. (There is a Twenty-ounce Pippin which is a large inferior somewhat striped green apple.) Tree vigorous, with compact head, a regular and abundant bearer.

Fruit very large, roundish, slightly uneven; surface greenish yellow, almost wholly covered with marbled and mixed red, with boldly marked stripes and splashes of bright crimson, very showy; dots distinct, few, large, gray; cavity regular, deep, slightly russeted; stem short; basin rather shallow, smooth, or slightly corrugated; calyx small, half open; segments erect convergent. Core closed; cells ovate, slit; tube funnel-shaped; stamens median; seeds plump, few; flesh yellow, coarse-grained, sprightly, pleasant, brisk subacid, good. October to January.



Twenty Ounce.



Utter.

University (*Duchess* No. 103).—Originated about 1882 from seed of *Duchess* by C. G. Patten, Charles City, Iowa.

Fruit large, oblate, very regular; surface a clear yellow with orange yellow on sunny side; dots minute, white, some distinct russet dots with white bases; cavity wide, deep, obtuse, regular; stem short to medium; basin very wide and shallow, with irregular prominences around the eye; calyx open; segments flat convergent. Core partially open, clasping; cells round, widely slit; tube funnel-shaped; stamens marginal; seeds not many, plump; flesh yellow with some yellow veinings, pleasant subacid, very good. Late fall.

Utter (*Utter Red*).—Origin, Wisconsin. Much grown in Wisconsin and other parts of the West. The fruit is remarkable for the decided variation shown in specimens from different parts of the tree. Some exhibitors at fruit displays sometimes take advantage of this fact to increase their number of "varieties."

Fruit above medium to large, the typical form is roundish oblate (sometimes roundish, somewhat elongated, angular, and flattened at ends); surface yellow, splashed, mottled, striped, and much dotted with light red (from interior of tree sometimes only a clear waxen pale yellow); dots white, minute, many, a few small russet dots; cavity regular, deep, usually with trace of russet; stem medium; basin rather shallow, wavy, or ribbed; calyx closed; segments very small, divergent. Core open or closed, clasping; cells obovate, slit; tube funnel-shaped; stamens median; seeds not many, very large and plump; flesh white, fine-grained, tender, juicy, mild, pleasant subacid, good. November, December.

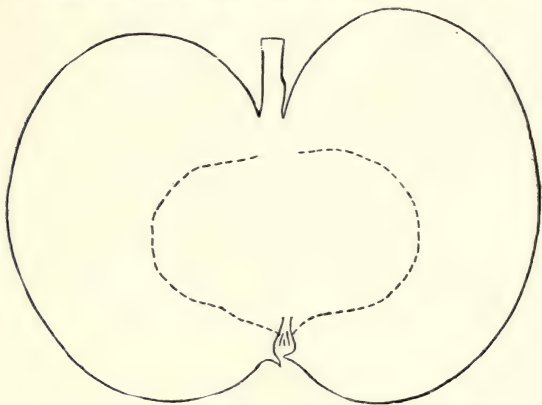
Vandevere.—An old variety, originated at Wilmington, Delaware; distinct from Vandevere Pippin grown at the West.

Fruit medium, oblate; surface waxen yellow, striped with red; dots numerous, green; cavity deep; stem about one inch long; basin round, moderate; calyx small, closed; flesh yellowish, compact, but tender, with a fine, rich, subacid flavor, good, valuable for culinary use. October to January.

Vandevere Pippin.—Origin unknown, supposed to have been Pennsylvania, but this is not well established; popular in parts of the West; tree very vigorous, large, spreading; abundant annual bearer.

Fruit large to very large, oblate, remotely conic, regular; surface yellowish green, striped, marbled, and blotched with red, with bright red stripes on sunny side; dots large, rough, yellow and brown russet,

some minute, gray, with green bases; cavity wide, regular, obtuse, deep, with stellate russet; stem short, stout; basin wide, shallow, smooth; calyx partially closed. Core closed, regular, clasping; tube funnel-shaped; stamens median; seeds many; flesh greenish yellow, firm, crisp, heavy, juicy, rich, brisk subacid, good, valuable for cooking and drying. November, December.



Vandevere Pippin.

Vanhoey (*Van Hoy No-core*).—Origin, North Carolina; tree a vigorous grower, with spreading branches. Recommended for its native region; not found valuable at New York Experiment Station.

Fruit medium or above, oblate, ribbed, frequently unsymmetrical; surface yellowish green, overlaid and splashed with dull red, flecked with yellowish dots on the red and dark spots on the yellowish green; cavity rather narrow, deep, thinly russeted; basin broad, abrupt, deep; calyx closed; flesh tinged with greenish yellow, moderately juicy, breaking, mild subacid, quality good, flavor lacks sprightliness or decided character. Season, January to May. (N. Y. Exp. Sta. Report, 1896, p. 276.)

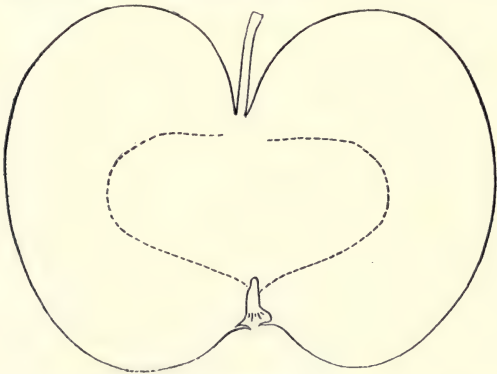
Vasilis Largest (*Basil the Great*, No. 971).—Origin, Russia. A large showy market apple.

Fruit very large, roundish oblong, truncated, sometimes roundish oblate, often unequal; surface unctuous, yellow, mostly covered with dark mixed red and crimson stripes and splashes, a very showy fruit; dots large, white, numerous; calyx deep, acute, regular; stem very short; basin wide, rather deep, abrupt; calyx closed or half open. Core irregular, closed; cells slit by irregular fissures; tube very long, conical; stamens marginal; seeds very plump; flesh coarse-grained, stained red next the skin and tinged faint red, juicy, acid, fair; use culinary. September.

Virginia Greening.—Supposed origin, Virginia; tree large, spreading, very productive.

Fruit large, roundish to roundish oblate; surface smooth, dull greenish yellow, brownish on sunny side; dots large, conspicuous, few, brown or grayish, with suffused whitish green rings or bases; cavity wide, large, regular, green; stem rather long; basin broad, wide, shallow, corrugated; calyx small, open. Core closed, regular, turbinate, meeting; seeds many, long; flesh yellowish, firm, pleasant subacid, good for kitchen and market. Late winter and spring.

Wagener.—Origin, Penn Yan, Yates Co., New York; tree thrifty, upright, productive, a very early bearer.

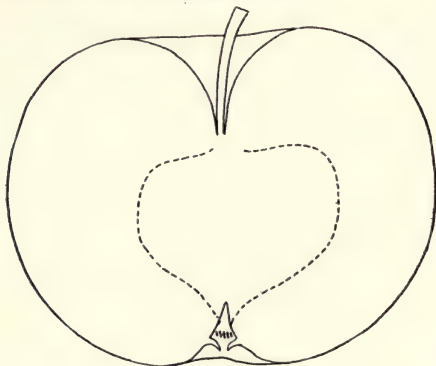


Wagener.

Fruit above medium, oblate, angular, often distinctly five-sided; surface smooth, polished, yellow, mostly covered with mixed bright

red, with rather obscure crimson splashes and stripes faintly overlaid with whitish; dots distinct, few, not large, whitish; cavity deep, obtuse, irregular, wide; stem medium; basin smooth, shallow, nearly regular, often abrupt; calyx closed; segments erect convergent. Core closed, clasping, sessile, flattened, cordate; cells round, slit; tube funnel-shaped; stamens marginal; seeds not many, short, somewhat flattened; flesh yellowish, juicy, very tender and delicate, fine-grained, brisk, mild subacid, very good to best. November to February.

Walbridge (*Edgar Redstreak*).—Originated by Joseph Curtis, Paris, Edgar Co., Ill., and named Edgar Redstreak, but the shorter name, under which it was raised for many years before the true name became known, has the preference; tree vigorous, at first upright, but spreading with age, a fine tree in nursery. In many parts of the West it has been a very tardy and shy bearer.



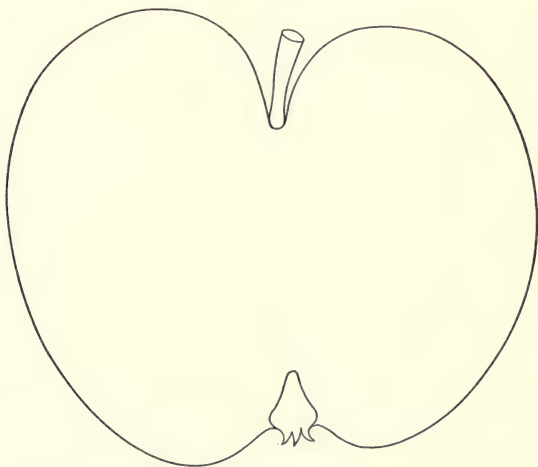
Walbridge.

Fruit medium, oblate, conical, regular; surface smooth, polished, pale greenish yellow, thinly shaded with pale red, with narrow stripes and splashes of bright red on sunny side; dots whitish, very obscure, few; cavity acute, regular, trace of russet; stem short to medium; basin narrow, flat, or nearly so (this is a marked characteristic), minutely wrinkled; calyx closed, small. Core open, clasping; tube funnel-shaped; stamens marginal; flesh white with green veinings, crisp, tender, juicy, mild subacid, fair. All winter.

Warfield.—Origin, Muscatine, Iowa; tree vigorous, an early and abundant bearer; grown in central and southern Iowa.

Fruit large, oblate, truncated, very regular as though turned in a lathe; surface waxen, clear, golden yellow, with faint bronze blush; dots distinct, few, minute, russet; cavity regular, acuminate, with stellate russet; stem medium; basin abrupt, regular, nearly smooth, with minute wrinkles; calyx wide open; segments erect convergent. Core small, closed, axile, sessile, barely clasping; cells broadly elliptical, slit; tube conical; stamens basal; seeds plump; flesh yellowish, fine-grained, moderately juicy, good, very good for cooking. September, October. May be used in July when two-thirds grown.

Washington Strawberry.—Origin, Washington Co., New York, on the farm of Job Whipple; tree vigorous, upright, spreading, foliage dense, an early and abundant bearer.



Washington Strawberry.

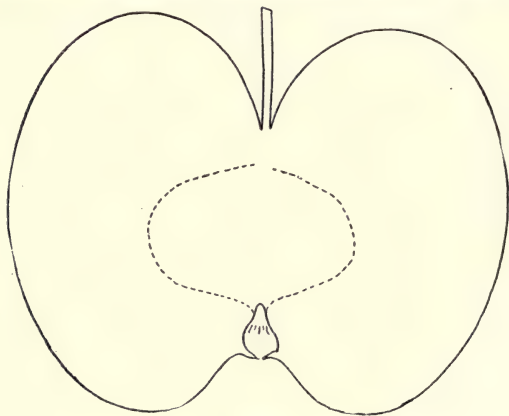
Fruit large, roundish conical, to roundish oblong conical, flattened at base; surface yellow, mostly covered with shaded and mottled rich red, with bright crimson splashes and stripes; dots many, light;

cavity narrow, deep, with a little brownish russet; stem short; basin rather narrow, abrupt, deep, corrugated; calyx nearly closed; segments rather long, divergent; tube funnel-shaped; flesh yellow, somewhat coarse, crisp, tender, juicy, brisk subacid, very good. September, October.

Watson, Carolina.—Of Southern origin; tree vigorous.

Fruit large, oblate conical; surface greenish yellow, shaded, splashed and striped with dull red; dots large, light, with dark centres; flesh white, coarse, tender, mild subacid, good. Summer.

Wealthy.—Originated about 1861 from seed obtained from Bangor, Maine, by the late Peter M. Gideon, Excelsior, Minnesota. This one variety is an enduring monument for its originator, who persevered in raising many thousands of apple and crab seedlings under the most discouraging circumstances. Tree vigorous, spreading, very productive. There are now many seedlings of Wealthy. (See Peter.)

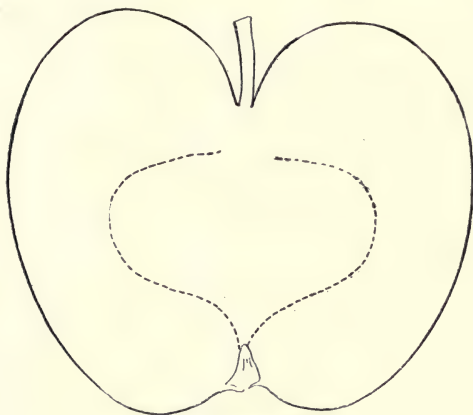


Wealthy.

Fruit above medium to large, roundish oblate, very regular; surface smooth, light yellow, almost wholly covered with bright crimson splashes and stripes, marbled, mottled, and mixed on sunny side, a beautiful fruit; dots many, distinct, minute, white; cavity

deep, acute, regular, with slight stellate russet; stem medium; basin deep, smooth, regular, abrupt, sometimes finely wrinkled; calyx partially closed; segments erect convergent. Core small, barely clasping, closed; cells round, entire; tube funnel-shaped; stamens median or basal; seeds plump; flesh white, often stained with red, tender, very juicy, sprightly subacid, very good. October to February.

Westfield Seek-no-further — Origin, Connecticut; the name is shortened to "Seeks" in the New York market; an old and highly esteemed variety in the northeastern States. Tree vigorous, spreading, productive.



Westfield Seek-no-further.

Fruit above medium to large, roundish conical, nearly regular; surface greenish yellow, thinly shaded with pale dull red, obscurely striped with bright red, surface roughened by the dots and thin russet net-veinings, rarely almost covered with russet; dots distinct, few, very large, yellow russet; cavity regular, acute, slightly russeted; stem medium, slender; basin narrow, smooth, shallow, leather-cracked (a marked characteristic); calyx open or closed; segments erect convergent. Core closed, meeting; cells ovate; slit; tube conical; stamens basal; seeds many, short, rounded, very plump; flesh yellowish

white, tender, fine-grained, rich, spicy, pleasant subacid, very good or best. October, February.

Wetmore.—Originated in Rhea Co., Tennessee.

Fruit medium to large, roundish oblong; skin of medium thickness, tenacious; surface moderately smooth, some patches of russet, greenish yellow, washed dull red and indistinctly striped crimson; dots medium, conspicuous, light gray; cavity regular, medium size, deep, abrupt slope, russet markings; stem medium length, rather slender; basin large, regular, deep, abrupt slope, marked with russet; calyx large, open; segments small, reflected against basin. Core conical, medium size, closed; seeds numerous, medium size, plump, brown; flesh yellowish white, fine-grained, tender, juicy, flavor subacid, quality good. Season, winter. (R. L. Watts, Tenn. Exp. Sta. Bul., Vol. IX, No. 1. May, 1896.)

Whinery (*Whinery's Late Winter*).—Origin, on the farm of Joshua Whinery, near Winona, Ohio; tree a very regular, early, and heavy bearer. Fruit has often been kept two years, and retains its crispness and good flavor until apples come again.

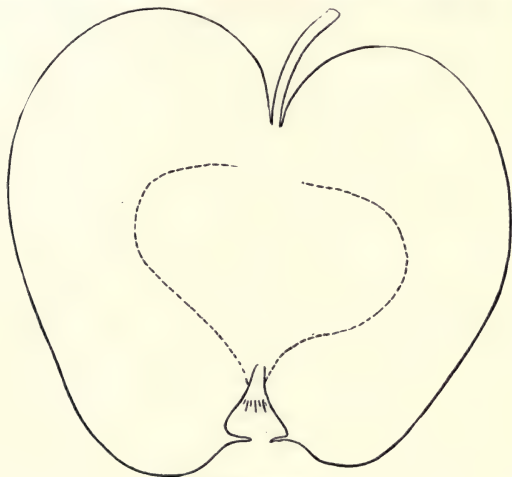
Fruit medium, roundish, nearly regular; skin tenacious; surface smooth, greenish yellow mostly covered with shaded lively dark red, obscurely splashed and striped with crimson; dots distinct, minute, russet, numerous; cavity regular, medium, abrupt, often russeted; stem medium, stout; basin abrupt, medium, slightly wrinkled and furrowed with golden russet netting; calyx closed or half open; segments erect convergent. Core closed, oval, clasping; cells elliptical, slit; tube funnel-shaped; stamens marginal; seeds plump, small, some imperfect; flesh yellow, fine-grained, tender, juicy, rich, pleasant subacid, good to very good. January to July and later.

White Juneating (*Yellow May*).—According to Downing this is an old English variety, mentioned by Evelyn in 1660 and described by Ray in 1688; tree a moderate grower, with roundish, upright, spreading head, productive.

Fruit small, round to roundish oblate, very regular; surface smooth, polished, pale yellow, sometimes with faint blush; cavity wide, shallow, lined with thin russet; stem rather long, slender; basin very shallow, slightly corrugated; calyx small, closed. Core closed; cells obovate, or roundish obovate, axile; tube funnel-shaped; stamens marginal or median; flesh white, crisp, tender,

juicy, subacid, good but soon becomes mealy. Among the very earliest during the last of June and first of July.

White Pearmain (*White Winter Pearmain*).—Origin unknown, supposed to be an old eastern variety the name of which was lost in



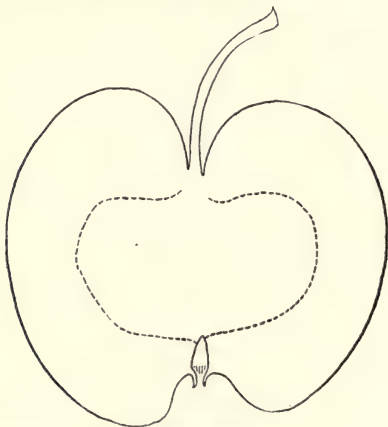
White Pearmain.

coming to the West, where it is most popular. Tree vigorous, spreading, productive.

Tree above medium to large, roundish oblong conic, somewhat oblique and ribbed toward the base; surface clear pale yellow, with faint bronze blush or warm cheek; dots distinct, numerous, minute, russet; cavity deep, regular, obtuse, with faint trace of russet; stem medium to long, often fleshy or knobbed at branch end; basin shallow, uneven, or ribbed; calyx open; segments long, divergent. Core closed; cells round, slit; tube funnel-shaped; stamens median; seeds plump; flesh yellowish, tender, juicy, crisp, spicy, very pleasant subacid, excellent to best. December to April.

The cut is of a fine specimen from the Pacific slope, in Washington, shown at the Pan-American Exposition, 1901.

White Pigeon.—Origin, Russia. There is a spurious white Pigeon (No. 317) which appears identical with Anis. As recognized in Minnesota the White Pigeon is a very handsomely colored apple with a long stem.



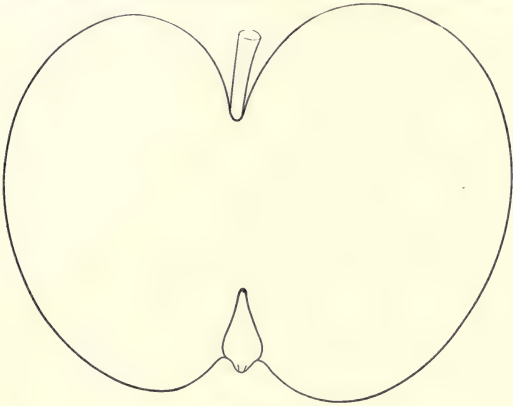
White Pigeon.

Fruit below medium, roundish, unequal, angular, ribbed; surface light yellow, striped and splashed with bright crimson, the coloring is characteristic in that the stripes are distinct and sharply defined, slightly marbled on sunny side, a handsome fruit; cavity acute; stem very long; basin abrupt, wavy, corrugated; calyx closed. Core open, meeting; tube small, narrow, conical; stamens marginal; seeds about fourteen, short, plump, dark brown; flesh white, stained with red (a marked characteristic), juicy, mild subacid, with sweet after-taste, good. Fall.

White Pippin.—Of unknown origin, popular at the West and Southwest. Of the Newtown Pippin class, and distinct from the Canada Reinette. Tree vigorous, upright, productive.

Fruit large, variable in form, roundish oblate, angular, slightly oblique, sometimes roundish oblong, flattened at ends; surface greenish white to pale yellow when ripe, waxy, sometimes with dull

blush, before maturity the surface toward the base often shaded with pink or purple, with obscure wavy streaks or stripes of white; dots very minute, few, brown, with green bases; cavity wide, deep, wavy, lined with green and russet; stem short; basin deep, abrupt, furrowed; calyx small, nearly closed. Core small, closed, clasping;

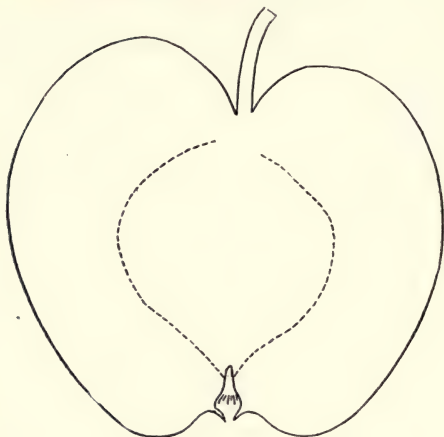


White Pippin.

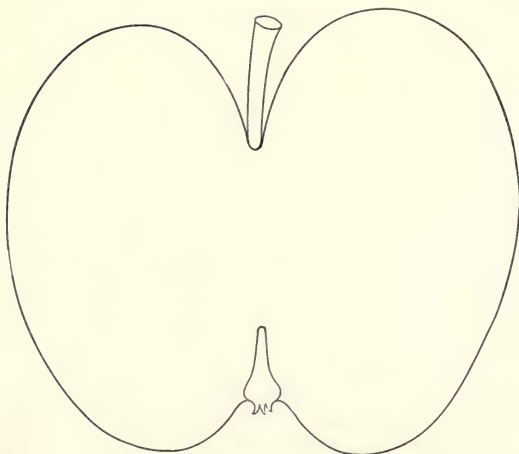
seeds many, angular, light brown, pointed; flesh yellowish white, tender, crisp, juicy, rich subacid to acid, very good. December to March.

Williams Favorite.—Origin, Roxbury, Massachusetts; tree productive, requires a strong rich soil; an excellent market variety.

Fruit above medium, roundish oblong conic, slightly unequal; surface very smooth, yellow, almost or wholly covered with light and very dark purplish red, with numerous brilliant dark crimson stripes and splashes, a beautiful fruit; dots few, very minute; cavity wide, shallow, slightly russeted; stem medium to long, slender; basin shallow, wide, abrupt, corrugated; calyx closed; segments large, connivent. Core closed, barely clasping; cells round, slit; tube funnel-shaped; stamens marginal; seeds, not many, pointed, rather long; flesh yellowish white, often stained with red, tender, moderately juicy, mild, agreeable, aromatic subacid, good. July, August.



Williams Favorite.

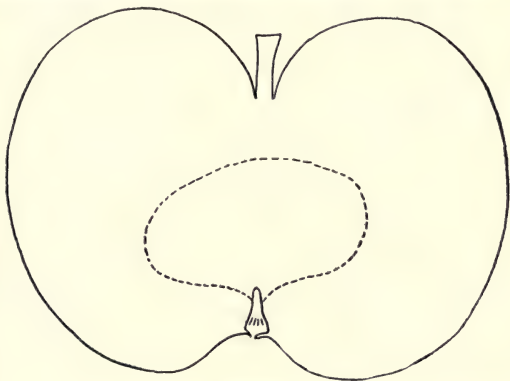


Willow Twig.

Willow Twig.—Supposed origin, Virginia; tree a poor grower in nursery, in orchard vigorous, spreading, with slender drooping shoots, productive; blights in some localities; profitable for market in parts of the West.

Fruit large, roundish, regular, flattened at ends, somewhat cylindrical; surface smooth, somewhat polished, dull light greenish yellow, obscurely marbled, striped and mottled with dull red; dots many, minute, gray and russet; cavity narrow, acute, sometimes lipped; stem medium to rather long, slender; basin wide, deep, abrupt, with obtuse rim, somewhat corrugated; calyx closed or half open. Core medium, closed, meeting; seeds many, plump; flesh yellowish green, firm, juicy, pleasant subacid, good only. Late winter and spring.

Windsor (*Windsor Chief*).—Origin, Wisconsin; tree very productive and an early bearer. One of the hardiest of the Wisconsin winter seedlings. Fruit hangs well to the tree in high winds.



Windsor.

Fruit medium, oblate, slightly conical and angular; surface somewhat unctuous, smooth, light greenish yellow, mostly covered with mixed and marbled dull red, indistinctly splashed, rarely striped, with crimson; dots many, large, gray, coalescent, some surrounded with russet; cavity wide, obtuse, regular, russeted, sometimes rather shallow; stem medium to long, slender; basin abrupt, rather narrow,

smooth; calyx closed; segments small, connivent. Core small, closed, clasping; tube funnel-shaped; stamens median; seeds small, elongated, light brown; flesh whitish yellow, firm, fine-grained, somewhat spicy, pleasant subacid, very good. December to spring.

Wine (*Hays; Pennsylvania Red Streak*).—Origin, Delaware; tree very large, spreading, very open, with small, curled, mealy leaves, displaying the heavy crops of fruit to good advantage.

Fruit rather large, roundish, truncated, regular, rarely unequal, and inclined; surface smooth, yellow, mostly covered with bright mixed deep red, with crimson stripes; dots large, gray, few; cavity deep, regular, acute, with stellate russet; stem short, thick; basin rather shallow, wide, nearly smooth, abrupt; calyx open; segments divergent. Core closed, small, turbinate, meeting; cells obovate, entire; tube funnel-shaped; stamens median; seeds large, plump, not many; flesh yellowish white, firm, juicy, crisp, rich, pleasant subacid, good to very good. Midwinter.

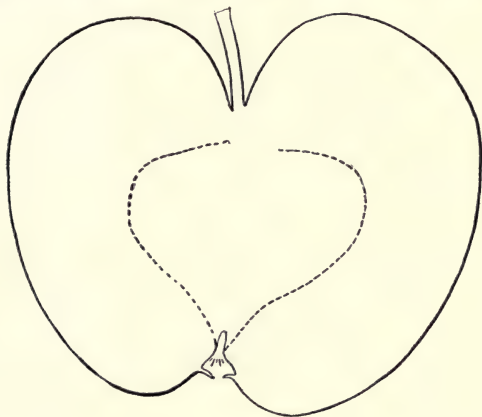
Winesap.—Supposed origin, New Jersey; described by Coxé in 1817 as one of the best cider and eating apples of his region (western New Jersey), very popular in parts of the South and West. One of the leading apples for export. Some of its known or supposed seedlings, such as Stayman, Gilbert, Paragon, and Arkansas, are larger in fruit and are considered superior in vigor of tree. For export their superiority to the parent has not yet been established. Tree moderately vigorous, with rather open, straggling head; very productive and an early bearer.

Fruit medium, roundish conical, often obscurely angular and slightly ribbed; skin moderately thick, very tough; surface smooth, rich dark yellow, mostly covered with fine lively dark red, sometimes obscurely striped, often with russet net-veining, especially toward the base; dots few, minute, indented toward the apex, distinctly elongated toward base; cavity wide, regular, acute, lined with reddish stellate russet, sometimes extending out a little over base; stem medium; basin narrow, shallow, plaited; calyx closed; segments flat convergent. Core slightly open, clasping, turbinate; cells ovate, slit; tube funnel-shaped; stamens marginal; seeds few, medium, short, plump, rather short, brown; flesh yellow, firm, crisp, fine-grained, rich, sprightly subacid, very good. December to May.

Winter St. Lawrence.—Imported in 1833 from Manchester, Eng., under the name of Mank's Codling, by the late Wm. Lunn, of Montreal;

given its present name by the Montreal Horticultural Society about 1873; tree a vigorous, round-topped grower; fruit of the Fameuse type of flesh, but not as high in quality as that variety.

Fruit medium to large, roundish, somewhat conical; surface greenish yellow, mostly covered with deep shaded red, with dark purplish red splashes and stripes; dots many, whitish, large, distinct, sometimes small russet patches; cavity wide, rather deep, obtuse,

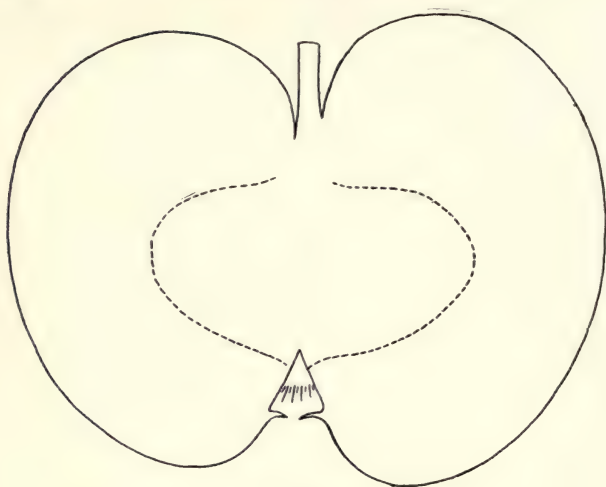


Winesap.

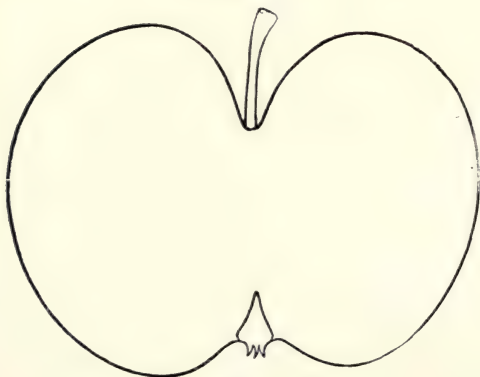
sometimes russeted; stem short, slender; basin narrow, nearly smooth; calyx closed or half open. Core small; flesh white, juicy, sprightly subacid, good. Early winter.

Wistal.—Origin, Texas; size medium to large; quality very good; season medium early. Mentioned in Bul. 8, Div. of Pomology.

Wolf River.—Originated with W. A. Springer, near Wolf River, Fremont, Wis., and disposed of before fruiting to the late Henry Riflen; supposed to be a seedling of the Alexander, which it somewhat resembles, but is more round and less conical and averages larger, as grown in the West. The Wolf River has largely superseded Alexander in the western States; tree a strong spreading grower, not an early bearer, but productive in alternate years.



Wolf River.



Wythe.

Fruit very large, often enormous, roundish to roundish oblate, somewhat irregular and angular, especially when overgrown; surface whitish yellow, almost wholly covered with bright red and rosy crimson, with carmine splashes and thin whitish bloom, a very handsome fruit; dots white, obscure; cavity regular, deep, somewhat acuminate, medium width, russeted; stem short; basin narrow, abrupt, wavy; calyx half open. Core open, clasping, medium size; cells rounded, ovate, slit; tube conical; stamens median; seeds not many, short, plump; flesh whitish, coarse-grained, moderately juicy, pleasant subacid, good only. October to midwinter.

Wythe.—Origin, on the farm of Rodolphus Chandler, Wythe, Illinois; tree vigorous, with round top; a good annual bearer, blooms late. First introduced about 1873. A seedling of *Ralls Genet*, and much resembles that variety in tree and fruit.

Fruit medium, oblate, slightly conic, nearly regular; surface white, shaded, striped and splashed over two-thirds its surface with bright red; dots few, light and gray; cavity rather large, deep; stem short, small; basin medium, slightly plaited; calyx small, closed. Core medium; flesh whitish, fine, tender, crisp, juicy, sprightly subacid, slightly aromatic, very good. January, March.

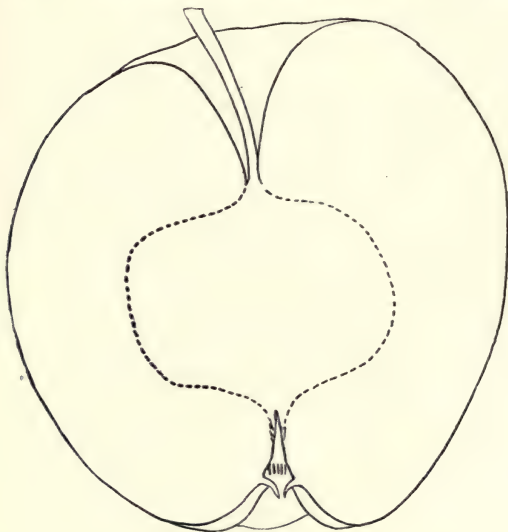
Yahnke.—Originated as a root sprout, from a tree killed in 1873, with Frank Yahnke, Winona, Minnesota; tree vigorous, spreading, productive. One of the candidates for the seedling apple prize offered by the Minnesota State Horticultural Society. Fruit "has kept in an ordinary cellar through March."

Fruit above medium to large, roundish, slightly conical, obscurely angular; surface smooth, clear rich yellow, mostly covered with fine dark crimson, with broad splashes and streaks of carmine, mixed and marbled, nearly solid on sunny side, a handsome fruit, the broad irregular dark crimson or carmine streaks are characteristic; dots many, very distinct, minute, yellow; cavity regular, acute, with a little stellate russet; stem medium; basin smooth, sometimes obscurely ribbed, very shallow, wide; calyx open; segments divergent. Core open, barely clasping; cells ovate, slit; tube conical; stamens median; seeds few, long, plump, pointed; flesh white, slightly stained pink next to skin, juicy, rich, mild, saccharine, pleasant subacid, very good. Winter.

Yates.—Origin, Fayette Co., Georgia; tree very upright; very productive; fruit a good keeper.

Fruit small, oblate or oblate conic, whitish yellow, overspread, shaded, splashed and striped with shades of red; dots many, small, light; cavity large, slightly russeted; stem slender; calyx small, closed. Flesh white, sometimes stained next the skin, tender, juicy, pleasant subacid, good. March to May.

Yellow Bellflower. — Origin, Burlington, New Jersey; first described by Cox. A large choice winter apple, a favorite for dessert wherever



Yellow Bellflower.

known; tree moderately vigorous, with spreading, roundish, rather drooping head.

Fruit large to very large; form oblong, somewhat angular and ribbed, tapering to the calyx; surface smooth, pale, lemon yellow, often with bronze red blush; dots obscure, numerous, minute, whitish and russet; cavity regular, deep, obtuse, with a faint trace of russet; stem medium to long, very stout; basin narrow, shallow, much

corrugated and ribbed; calyx closed; segments erect convergent. Core large, wide open, clasping; cells large, roomy, elliptical, much and widely slit; tube funnel-shaped, long; stamens marginal; seeds large, angular, imperfect; flesh yellow, with yellow veinings, tender, juicy, crisp, spicy, sprightly subacid, very good or best. December, February.

Yellow June. — Of unknown Southern origin; tree vigorous, upright; an abundant bearer.

Fruit below medium, roundish oblate, pale yellow; dots many, green and brown; cavity slightly russeted; stem long, slender. Core small; flesh white, tender, juicy, brisk, sprightly subacid, good. June, July in the South; August at the North.

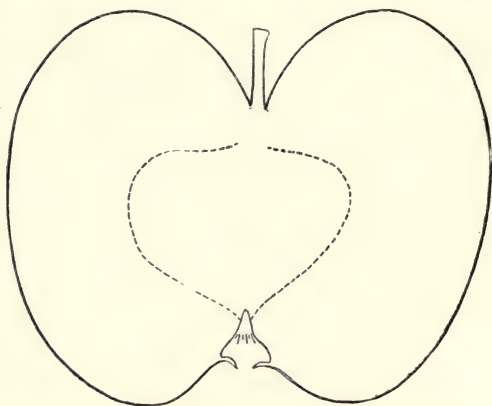
Yellow Newtown (*Albemarle Pippin*).—Supposed origin, Newtown, L. I., in the early part of the eighteenth century. It is not definitely known whether the original tree was of the "Green" or the "Yellow" type, nor is a record known of the distinct origin of the two. Cox, in 1817, first described them as distinct. The Yellow Newtown has now almost superseded the Green Newtown for commercial orchards and exportation, owing to its superiority in size, color, and keeping capacity; both are successfully grown in but few portions of the United States. Choice consignments of Yellow Newtown or Albemarle Pippins often sell in England for two or three times the price of other American apples.

The following description of Yellow Newtown was made from choice specimens from Virginia at the Pan American Exposition:

Fruit large, heavy, roundish cylindrical to roundish oblate, somewhat angular, sometimes inclined; surface yellowish green, overlaid with suffused whitish veinings and roughened by dots and net-veinings of russet, rarely a bronze blush; dots distinct, numerous, minute, russet, a few large russet specks, often some red blotches; cavity regular, wide, deep, obtuse, with large stellate russet extending out over base; stem short; basin wide, ribbed, medium deep to rather shallow; calyx open; segments flat convergent. Core barely clasping, closed; cells ovate, widely slit, with large cellular exudate; tube funnel-shaped; stamens basal; seeds long, sharp-pointed; flesh firm, very juicy, yellow, sprightly subacid.

Downing wrote: "The Yellow Newtown Pippin is handsomer in appearance and has a higher perfume than the Green or Newtown Pippin, and its flesh is rather firmer, and equally high-flavored; while

the Green is more juicy, crisp, and tender. The Yellow Newtown Pippin is rather flatter, measuring only about two inches deep, and it is always quite oblique—projecting more on one side of the stalk than the other. When fully ripe it is yellow, sometimes with a rather lively red cheek, and a smooth skin, few or none of the spots on the Green variety, but with the same russet marks at the stalk.



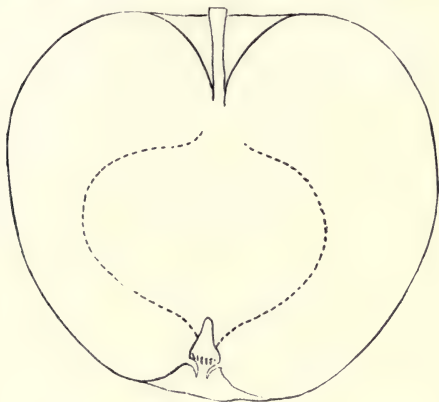
Yellow Newtown.

It is also more highly fragrant before and after it is cut than the Green. The flesh is firm, crisp, juicy, and with a very rich and high flavor. Both the Newtown Pippins grow alike, and they are both excellent bearers. This variety is rather hardier and succeeds best. February to May."

Yellow Sweet (No. 167).—Origin, Russia; tree very hardy at the North.

Fruit medium, roundish, regular; surface yellow; somewhat transparent; dots white, suffused; cavity regular, acute; stem short to medium; basin narrow, abrupt, rather shallow, wrinkled; calyx closed. Core closed; cells ovate, entire; tube conical; stamens median; seeds few, some imperfect, short, plump, flattened; flesh white, juicy, sweet, good. August.

Yellow Transparent.—Origin, Russia; imported from St. Petersburg in 1870 by the U. S. Department of Agriculture. It is now a commercial variety for first early. Tree vigorous, upright, round-topped, a good and early bearer.



Yellow Transparent.

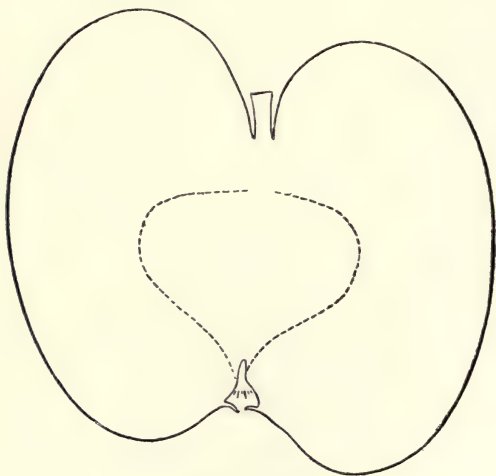
Fruit medium or above, roundish conical, sometimes oblate conical, obscurely angular; surface smooth, light yellow; dots large, white, suffused, many; cavity regular, acute, usually russeted; stem long; basin narrow, shallow, corrugated; calyx closed. Core half open, clasping; tube conical; stamens marginal; flesh white, fine-grained, juicy, pleasant, sprightly subacid, good to very good. Late July and early August.

Yopp.—Origin, Georgia; tree moderately vigorous, upright spreading.

Fruit large, roundish, slightly conic, greenish yellow, with a little russet in the sun; dots few, russet; cavity deep; stem short; basin deep; calyx open. Core small; flesh white, fine-grained, tender, juicy, subacid, good. November.

York Imperial (*Johnson's Fine Winter*).—Originated early in the nineteenth century near York, Penn. A leading commercial variety and growing in favor for export. Tree a moderate grower, productive.

Fruit medium to large, roundish to roundish oblate, truncated, somewhat obliquely cylindrical; surface light yellow, almost wholly covered with washed, marbled, and mixed bright red, indistinctly striped, overlaid with grayish; dots few, yellow and gray, distinct; cavity regular, narrow, acute, with some stellate russet; stem short, moderately stout; basin smooth, deep, abrupt, slightly leather-cracked; calyx closed or open; segments small, flat convergent. Core small, mostly open, barely clasping, cells ovate, widely slit;



York Imperial.

tube funnel-shaped; stamens median; seeds many, plump, often covered with much cellular exudate; flesh yellow, with yellow veinings, firm, crisp, juicy, pleasant, sprightly subacid, good to very good. November to February.

A distinct strain or sub-variety of York Imperial is locally propagated in York Co., Penn. It is of smaller size, less oblique form, brighter color, finer texture of flesh, and longer-keeping quality than the common type. Origin as yet undetermined.

Zolotareff (No. 275).—Origin, Russia. A large handsomely colored apple of the Vasilis Largest type and much resembling that variety.

Zusoff (No. 585).—Origin, Russia. For a time Anisim was mixed with this variety, but the two are very distinct.

Fruit large, heavy, roundish oblate, regular or faintly angular; surface smooth, glossy, greenish yellow, almost or wholly covered with a peculiar dark brownish red, no stripes nor splashes, a showy fruit; dots minute, numerous, whitish, distinct; cavity abrupt, very deep, regular, green and russet, the russet sometimes extending out in irregular rays; stem very short; basin small, regular; calyx closed; segments small, erect convergent. Core regular, clasping; tube conical; stamens median; seeds few, plump; flesh white, with greenish tinge and veinings, juicy, firm, fine-grained, subacid, good. Winter.

CRAB-APPLES.

In the prairie Northwest considerable attention has been paid to Siberian crab-apples because of their superior hardness and value for culinary use. Botanically considered, Siberian crabs are of two types: *Pyrus baccata* and *P. prunifolia*. The true Siberian crab (*Pyrus baccata*), according to Russian writers, has deciduous calyx segments (*i.e.*, the segments fall off as the fruit ripens); in *P. prunifolia* the segments persist in the ripe fruit. Prof. L. H. Bailey has recently considered the crabs of the latter type to be hybrids of *P. baccata* with the common apple, *P. Malus*. Thomas Andrew Knight, a century ago, in England, produced several hybrids between the common apple and the pure Siberian crab, which proved specially valuable for cider. Since the introduction of the Siberian crabs into America they have been grown in apple orchards containing many varieties and have hybridized very freely with the common apple. There are now literally thousands of these crab hybrids, especially in the Northwestern States. Owing to the limited demand the distribution of many, even of the better ones, appears to be largely local. The Minnesota State Horticultural Society's recommended list of crabs and hybrids at present includes: Best for general cultivation: Virginia, Martha, Whitney, Early Strawberry, Minnesota,

Sweet Russet, Gideon's No. 6, Brier Sweet. Promising for trial: Dartt, Pride of Minneapolis, Crampton's No. 3, Lyman's Prolific, Faribault.

The Northwestern market demands mainly bright red-colored varieties; for preserves the size must not be too large. For profit the trees must not be too subject to blight.

In recent years, in Iowa, attention has been drawn to large-fruited forms of the native crab as found at the West. So far the list of cultivated varieties includes Soulard, Kentucky Mammoth, Mercer, and Howard, with some local sorts not yet generally introduced.

True long-winter-keeping quality has not been secured as a result of hybridization of the common apple with the Siberian crabs, and it is to be hoped that it will be obtained from these native American crabs. These native crabs all easily keep "till apples come again," and were formerly cached or buried in the earth for winter preservation by the Indians. At the present stage of development they will serve only for culinary purposes as a substitute for the quince. It is possible that the future winter apples of the Northwest will contain an infusion of the native crab of the Mississippi valley.

From the ornamental standpoint both the Siberian and native crabs have considerable value. The Siberian crabs as a class are much hardier, and will live and bear fruit much farther Northwest than the native crabs.

Ball Winter (Ball's Winter).—Origin, town of Sutton, province of Quebec, Canada. Tree a thrifty grower, with spreading head; an annual bearer. A very good market crab.

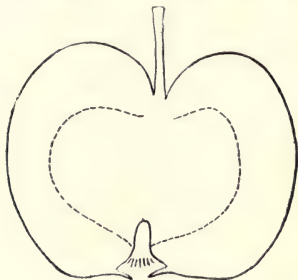
Fruit slightly below medium, ovate; surface greenish white, with yellow blush on sunny side; flesh crisp, spicy, rich, acid, good to very good. November to January.

Beach (Beach's Sweet).—Of American origin.

Fruit large, roundish, somewhat conical, regular, yellow, mostly covered with bright red, thinly overlaid with gray; cavity regular, obtuse, much russeted; stem medium to long; basin regular, slightly wrinkled; calyx closed; segments erect convergent. Core closed; cells obovate, slit; tube conical; stamens median; flesh white, moderately juicy, very pleasant, sweet, good. September, October.

Brier (Brier Sweet).—Originated with B. B. Brier, Baraboo, Wisconsin; is the result of a fertilization of the Siberian crab with the *Bailey Sweet* apple. Tree hardy, vigorous, and productive.

Fruit as large as Transcendent, roundish, regular, flattened at ends, yellow, mostly covered thinly with dotted and mixed red, obscurely splashed and striped and overlaid with whitish; dots obscure, few, minute, whitish; cavity wide, regular, obtuse, with some stellate russet; stem medium to long; basin flat, corrugated; calyx open; segments long, divergent. Core closed; tube wide, long, funnel-



Brier Crab.

shaped; stamens marginal; flesh whitish, crisp, juicy, very sweet, very good to best for dessert or preserves. September, October.

Cherry.—Of the pure *Pyrus baccata* type, having deciduous calyx segments. One of the oldest varieties.

Fruit small, oblate, nearly regular or slightly angular; surface smooth, yellow, nearly covered with bright red, with blue bloom; dots distinct, many, large, whitish; cavity regular, obtuse, wide, with a little broken russet; stem very long, slender; basin wide, shallow; calyx closed; segments as they fall off leave a round russet scar; flesh crisp, juicy, pleasant acid; the fruit hangs long, almost even to drying, on the tree. September, October.

Dartt (*Dartt's Hybrid*).—Originated from seed of Tetofsky by E. H. S. Dartt, Owatonna, Minnesota. One of the best of the hybrids.

Fruit large, conical, very regular; surface yellow, mostly covered with bright red stripes and splashes, mixed on sunny side, a handsome fruit; dots white, obscure; cavity regular, deep, acute, with trace of russet; stem long; basin flat, corrugated; calyx closed; segments large, long. Core closed or half open, clasping; tube funnel-shaped; stamens median; flesh white, juicy, subacid, good. September.

Early Strawberry.—A popular variety at the West. Chas. Gibb, the noted Canadian pomologist, wrote in 1885: "This ripens with the Red Astrachan apple. It is of small size, but nothing that I grow equals it in quality. It has no astringency."

Fruit small, roundish oblate; surface yellow, handsomely striped with red, mixed and marbled on sunny side; cavity regular; stem long; basin flat; calyx closed. Core closed; cells round; tube funnel-shaped; stamens marginal; seeds large, flattened; flesh white, stained with red, juicy, subacid, very good. August.

Elgin (*Lady Elgin, Geneva*).—Originated on the farm of James Forbes, of Ridott Township, Illinois. Tree hardy, vigorous, upright, slender branches, very productive.

Fruit large, roundish oblate, regular, surface smooth, whitish yellow, nearly covered with bright rich red; dots few, light and gray; cavity small; stem medium, slender; basin shallow, corrugated; calyx closed; flesh white, fine, tender, juicy, mild subacid, slightly vinous; very good for canning or dessert. September, December. (Downing.)

Excelsior.—"A seedling of Wealthy, originated by Peter M. Gideon, Excelsior, Minnesota, from whom it was received in 1888.

"Fruit very large for a crab, nearly as large as a medium-sized apple, roundish oblate; stem rather long and slender, sometimes bracted, and inserted in a narrow rather shallow cavity; calyx rather large, closed; set in a shallow, broad-plaited basin; skin smooth, yellow, sprinkled with numerous russet dots, and shaded or splashed with red over much of its surface; handsome in appearance; flesh white, not fine-grained, firm, juicy, subacid, with crab-apple flavor; good to very good in quality. Begins to ripen about the first of September. Tree vigorous, upright, spreading." (Beach and Paddock, N. Y. Exp. Sta. An. Rep., 1894.)

Faribault.—Originated at Faribault, Minnesota, from seed of Gilpin. Placed on Minnesota State Horticultural Society's Fruit List December, 1902.

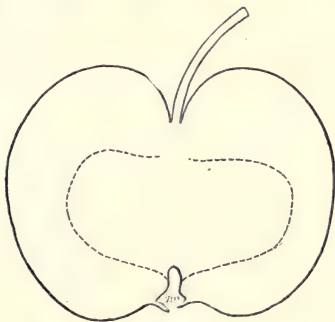
Fruit large, roundish, somewhat five-sided, flattened at ends; surface smooth, yellow, mostly covered with fine nearly solid dark red, with obscure carmine streaks; dots distinct, minute, yellow; cavity regular, obtuse, deep; stem long; basin nearly flat, corrugated; calyx closed; segments erect convergent. Core closed; cells ovate; tube funnel-shaped; stamens median; seeds short, plump;

flesh yellow, with yellow veinings, moderately juicy, mild subacid, good. Winter.

Florence.—Originated by Peter M. Gideon, Excelsior, Minnesota. One of the best crabs for market.

Fruit medium, oblate, nearly regular, obscurely ribbed and uneven; surface polished and waxy, yellowish white, mostly covered with brilliant solid crimson, somewhat mottled on shady side, a beautiful fruit; dots few, minute, white, very obscure; cavity deep, regular, slightly russeted; stem long; basin flat, minutely wrinkled; calyx closed; segments divergent, long. Core closed; cells obovate, entire; tube funnel-shaped; stamens marginal; flesh yellowish white, tender, very crisp and juicy, brisk subacid, good. September.

Gibb.—Originated by the late Geo. P. Peffer, Pewaukee, Wisconsin, by crossing an oblate yellow Siberian crab with pollen of the Fall Green apple.



Gibb Crab.

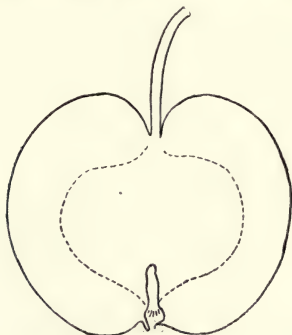
Fruit large, roundish oblate, very regular; surface rich orange yellow, blushed on sunny side, with a little thin net-veining of russet, a beautiful fruit; dots white, minute; cavity regular; stem medium long; basin shallow, wide, often wrinkled around the eye; calyx open; flesh a rich orange yellow, juicy, pleasant acid. September.

Howard (Hamilton).—Probably a hybrid of the native crab (*Pyrus Iowensis*) with the cultivated apple (*P. Malus*). Originated near Oakville, Iowa; first brought to notice by a Mr. Howard, and

later it attracted notice in the orchard of Jesse Hamilton, of Morning Sun, Iowa, about fifteen years ago.

Fruit large; size two and one-quarter by two and one-half inches or larger, roundish cylindrical, flattened at ends; surface green; dots obscure, many, whitish; cavity regular, acute, with stellate russet; stem long; basin wide, medium deep, with a few minute wrinkles; calyx open; segments erect convergent. Core closed, small, rounded, nearly sessile; cells obovate, entire; tube cylindrical, wide, extending to center of fruit; stamens extremely marginal, touching the segments; seeds few, small, plump; flesh greenish white, with the acid astringency of the wild crab; use culinary. A very late keeper.

Hesper Blush.—Fruit medium, roundish, regular; surface a clear rich yellow, blushed on sunny side; dots white, minute, sometimes a



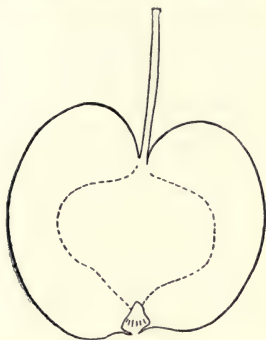
Hesper Blush Crab.

few russet dots; cavity regular, russeted; stem long; basin shallow, wrinkled; calyx closed. Core closed or half open; flesh yellowish white, pleasant subacid, good for table or culinary use. November.

Hyslop.—An old and widely known variety. Tree of strong growth, rather spreading. Wood light-colored, a little downy. Its late season and showy appearance makes it valuable for market.

Fruit large, produced in clusters, roundish, tapering, regular, sometimes obscurely angular; surface smooth, nearly or entirely covered with very dark solid red, with heavy blue bloom, a beautiful

fruit; dots minute, yellow, obscure, many; cavity obtuse, regular; stem long, slender; basin flat, corrugated; calyx small, closed; segments divergent. Core closed; tube conical; stamens median;



Hyslop Crab.

flesh yellow, acid; good for culinary use and for cider. September to November.

Island Gem.—Origin, town of Grand Isle, Grand Isle County, Vermont.

Fruit medium, round, slightly oblate, red, with yellow ground; flesh yellow, mild, subacid, hardly good; use cider and jelly. Season, October (in Champlain Valley).

Jumbo.—Origin, Newport, Vermont. "Probably a hybrid."

Fruit very large, oblong; surface bright red over yellow ground; flavor a mild acid; quality best to very best for dessert and kitchen. November and December.

Kentucky Mammoth.—Supposed origin Kentucky, as it was received about thirty years ago under the above name from Charles Downing by B. A. Mathews, Knoxville, Iowa. Evidently a native crab hybrid (*Pyrus Iowensis* × *P. Malus*).

Fruit much like the Mercer, but lighter green and more oblate. Desirable for culinary use as a substitute for quinces.

Lyman Prolific.—Originated by H. M. Lyman, Excelsior, Minnesota, about thirty-five years ago.

Fruit large, roundish, conical; surface yellow, mostly covered with bright mixed red, with indistinct dark crimson stripes and splashes; dots white, minute; cavity nearly or quite flat, often with protuberances around and against stem; stem long; basin narrow, wrinkled; calyx closed. Core closed; tube conical; stamens median; flesh yellowish white, acid. Good for culinary use. September, October.

Marengo.—Said to be a seedling found in the rows of an old seedling nursery of apple-stocks. Discovery attributed to James F. Lester, Marengo, Illinois. Young shoots vigorous, reddish brown, with the gray specks, bloom, and scaly cuticle peculiar to the Siberian.

Fruit large, roundish, flattened at blossom end; surface smooth, bright warm red on yellow ground; dots few, gray or light russet; cavity narrow; stem long, slender; basin broad, open, corrugated; calyx closed; flesh yellowish white, crisp, juicy, a little harsh until fully ripe, when it is a mild and pleasant subacid. Early winter to late in spring. (Downing.)

Martha.—Originated by the late Peter M. Gideon, Excelsior, Minnesota.

Fruit large, oblate, very regular; surface smooth, yellow, almost entirely covered with a beautiful bright red, with a bluish bloom, no stripes or splashes; dots white, conspicuous; cavity wide, regular; stem long; basin very wide, nearly flat; segments often nearly obsolete. Core closed; flesh yellowish white, acid, good for culinary use. September to December.

Mary (*Gideon's No. 6*).—Originated by Peter M. Gideon, Excelsior, Minnesota.

Fruit very large for a crab, oblate, very regular; surface a beautiful solid dark crimson, with heavy blue bloom; dots minute, white, few, obscure; cavity obtuse, regular; stem about one inch long; basin wide, smooth; shallow; calyx closed; segments erect convergent. Core half open; tube funnel-shaped; stamens marginal; cells ovate, entire; flesh white, sharp subacid, good. August, September.

Mercer.—A native crab originated in Mercer County, Illinois; introduced by N. K. Fluke, Davenport, Iowa. Apparently a hybrid (*Pyrus Iowensis* × *P. Malus*).

Fruit two to two and one-half inches in diameter, oblate, nearly regular, often unequal; surface green, turning to yellow, very oily; dots distinct, many, minute, whitish, a few large dots; cavity wavy, wide at mouth, sloping gradually; stem medium; basin wide, abrupt,

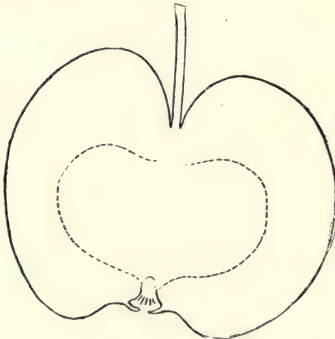
ribbed; calyx closed; segments erect converging. Core closed; tube nearly cylindrical, wide, long; stamens extremely marginal, touching the segments; flesh yellowish, with yellow veinings, very firm, astringent, acid; use culinary. Late winter.

Minnesota.—Origin, Minnesota.

Fruit very large for a crab, roundish, irregular, obscurely angular, clear light waxen yellow, with faint bronze blush; dots white, minute, many, obscure; cavity obtuse, regular; stem long; basin nearly or quite flat, wrinkled, often corrugated; calyx closed; segments large, divergent. Core closed, meeting; tube conical; stamens marginal; flesh white, firm, juicy, fine-grained, subacid, good. September, October.

Montreal (*Montreal Beauty*).—Of American origin; tree a strong grower and very ornamental.

Fruit large, roundish obovate to roundish oblate, bright yellow, mostly covered with rich dark red, a beautiful fruit; dots white, minute; cavity acute, slightly russeted; stem very long; basin flat, corrugated; calyx closed; segments large, divergent; flesh yellowish, rich, firm, acid. September, October.



October Crab.

October.—Originated by Peter M. Gideon, Excelsior, Minnesota.

Fruit very large for a crab, roundish, truncated, regular; surface greenish yellow, mostly covered with dark marbled red, with darker

crimson splashes, a handsome fruit; dots very minute, white, obscure; cavity acute, with large patch of russet; stem long; basin wide, shallow, wrinkled; calyx closed. Core closed; tube conical; stamens median. Late fall.

Orange.—Origin, America.

Fruit medium, roundish; surface a rich orange yellow, often with much open net-veining of russet; dots minute, white, obscure; cavity acute, with trace of russet; stem very long; basin very shallow to flat, corrugated. Core open; cells ovate, slit; seeds plump, rounded; flesh light salmon yellow, with yellow veinings, rich mild subacid, with sweet aftertaste, good. September.

Pride of Minneapolis.—Originated in 1855 by James Wyman Elliott, Minneapolis, Minnesota. Tree immensely productive.

Fruit medium, oblong conic; surface greenish yellow; dots white, obscure, minute, suffused; cavity obtuse, furrowed, often slightly russeted; stem very long; basin flat, corrugated; calyx closed; segments long, divergent. Core closed; tube funnel-shaped; stamens marginal; flesh white, juicy, acid, good for culinary. Late fall, early winter.

Pringle Sweet,—Originated in the Champlain valley in Vermont; town uncertain.

Fruit slightly below medium, round; surface bright red; flesh mild, sweet, very good to best; use dessert, cooking, and market. Late September.

Quaker Beauty.—Fruit medium, roundish conic, obscurely angular; surface smooth, a clear pale waxen yellow, with bright red blush; dots white, very minute; cavity acute, regular, trace of russet; stem long, slender; basin shallow, slightly corrugated; calyx closed; flesh white, juicy, sweet, good. Late fall.

Queen Choice.—Origin unknown.

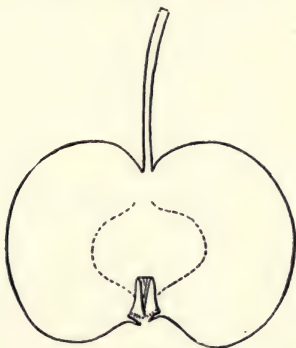
Fruit above medium, round conical; surface crimson; flesh mild acid, very good to best. Season, October in Northern Vermont and Canada.

Red Siberian.—Origin, France.

Fruit about three-fourths of an inch in diameter, very regularly formed and rather flat. Skin smooth, of a lively scarlet over a clear yellow ground, and, when the bloom is rubbed off, is highly polished. Stalk nearly two inches long, and very slender; calyx small, slightly sunk. Fit for preserving in September and October. (Downing.)

Shields.—Fruit small, angular, flattened, somewhat ribbed, unequal; surface a bright solid crimson, the coloring thinner on shady side showing a little yellow ground; dots few, minute, obscure; cavity regular, obtuse; stem three-quarters inch long; basin flat, slightly corrugated; calyx closed; segments divergent. Core closed; cells round, entire; tube conical; stamens marginal; flesh white, juicy, acid, good for culinary use. September, October.

Soulard.—Considered to be a hybrid of the wild crab and the common apple (*Pyrus Iowensis* × *P. Malus*); the first of its type to be brought under cultivation. Originated near St. Louis, Missouri, about 1844; introduced by Hon. James Soulard, of Galena, Illinois. The fruit is used for preserves as a substitute for quinces.



Soulard Crab.

Fruit one and one-half to two inches in diameter, oblate, regular; surface green, very oily; dots obscure, many, gray, minute; cavity wide, obtuse, regular; stem long; basin wide, shallow, ribbed; calyx closed, pistil and stamen vestiges often protruding; segments erect convergent. Core closed; cells obovate; tube broad, cylindrical; stamens extremely marginal, touching segments; seeds few, large, plump, some imperfect; flesh greenish white, astringent, sharp acid. Late winter and spring.

Spitzenburg.—Fruit of the pure *Pyrus baccata* type, with deciduous calyx segments; size round, truncated, one and one-half inches in diameter; surface covered with solid dark crimson, with blue bloom, a handsome fruit; dots obscure, few, russet; cavity wide, obtuse; stem long to very long; basin wide, shallow, smooth; flesh yellow, juicy, firm, pleasant subacid, good for table or culinary. Late fall, early winter.

Stanstead, Rose of.—Origin, Stanstead, province of Quebec, Canada. Tree a vigorous grower, attaining very large size when old. "Probably a hybrid."

Fruit large, oblong; surface dark red, very handsome; flesh streaked with red, juicy, brisk subacid; quality the very best for dessert and kitchen; "it makes the finest of jelly on account of its being so red." October.

Sweet Russet.—Not of attractive color but worthy of cultivation owing to its good quality for table use. Tree very productive.

Fruit large, roundish oblong conic; surface greenish yellow, mostly covered with a thin russet in irregular patches and open net-work; dots large, gray, scattered; cavity acute, russet; stem long; basin narrow, flat, corrugated; calyx closed; flesh rich, sweet, very good. August, September.

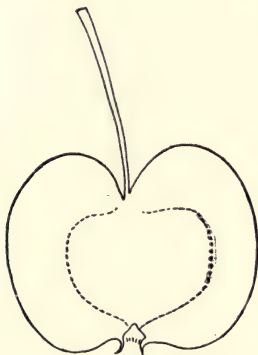
Tonka.—Origin, near Lake Minnetonka, Minnesota. Of the pure *Pyrus baccata* type, with deciduous calyx segments.

Fruit medium, oblate, regular; surface orange yellow, nearly covered with bright red, with light bloom; dots large, gray, many; cavity wide, regular, obtuse; stem long; basin shallow, smooth; calyx entirely closed, with no opening into core; segments deciduous, leaving a round yellow russet patch in bottom. Core closed; cells ovate, entire; seeds few, many imperfect; flesh yellowish, acid, good for culinary use. October.

Transcendent.—Origin, America. One of the best market varieties, but in many sections is much subject to blight.

Fruit medium to large, roundish to roundish oblong, flattened at ends, somewhat angular; surface a clear bright golden yellow, striped and thinly shaded with crimson, with delicate white bloom, a beautiful fruit; dots obscure, few, minute, white; cavity regular, obtuse; stem long, stout; basin nearly flat, somewhat corrugated; calyx closed; segments large, leafy. Core closed; tube conical; stamens marginal;

flesh creamy yellow, crisp, acid, somewhat astringent, changing when fully ripe to a pleasant agreeable subacid. August, September.



Transcendent Crab.

Van Wyck.—A chance seedling on the farm of Miss Caroline Van Wyck, Fishkill, Dutchess County, New York. Tree vigorous, upright, productive.

Fruit large, roundish, slightly conic; surface smooth, whitish, shaded and mottled with light bright red, and covered with a thin bloom; stem rather long, slender; cavity rather narrow, deep; calyx closed; basin medium, smooth. Core small and closed; flesh whitish, fine, rather firm, moderately juicy, rather rich, honeyed sweet, good. September. (Downing.)

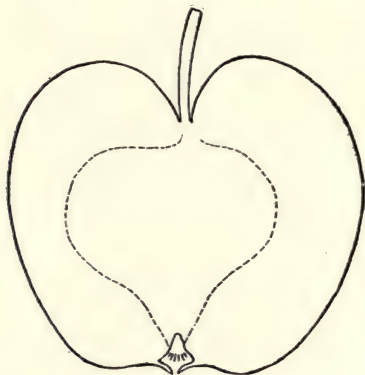
Virginia.—Found about forty years ago mixed among trees of the old Hewes Virginia by N. K. Fluke, Davenport, Iowa. In Iowa and Wisconsin the Virginia has been found very hardy and desirable as a stock for top-grafting owing to its wide-spreading top and vigorous growth.

Fruit medium; roundish, flattened, regular; surface yellow, thinly covered with red, sometimes nearly solid red; cavity obtuse, regular, slightly russeted; stem long; basin nearly or quite flat,

corrugated and wrinkled; calyx closed; flesh juicy, acid, good for culinary use. September, November.

Whitney. (*Whitney No. 20*).—Origin, Illinois. Popular and widely planted at the West. Good for table and excellent for culinary use and cider.

Fruit large, roundish to roundish oblong, nearly regular, sometimes obscurely angular; clear waxen yellow, almost wholly covered with lively dark red, delicately shaded, with dark crimson splashes, a



Whitney Crab.

handsome fruit; dots few, minute, white, obscure; cavity wide, obtuse; regular, trace of light russet; stem one inch long; basin nearly or quite flat, wrinkled; calyx closed; segments erect convergent. Core closed; tube funnel-shaped; cells ovate, slit; flesh yellow, tender, juicy, subacid, very good. August, early September.

Yellow Siberian.—The Red Siberian and Yellow Siberian are good representatives of the pure Siberian Crab (*Pyrus baccata*). The deciduous calyx segments are marked characteristics. Trees forty years old in Minnesota, Wisconsin, and other parts of the Northwest demonstrate their hardiness.

Fruit small, roundish, flattened at ends, angular, irregular; sur-

face smooth, a rich yellow; cavity regular, obtuse; stem very long; basin flat, wrinkled; calyx closed; flesh yellow, juicy, acid.

Downing wrote concerning the Yellow Siberian: "This scarcely differs from the common Siberian Crab except in its fruit, which is rather larger, and of a fine amber or golden yellow. Both this and the red are beautiful ornaments to the fruit garden in summer and autumn, and are equally esteemed for preserves and jellies. September."

THE PEAR.

AN outline of the races and history of the standard and dwarf pears, with their propagation and management, is given in Chapter XIII of Part I, and distance apart of planting in Section 107.

As far as possible by inspection of catalogues, fruit-lists for the different States, and State and National Horticultural Reports, an attempt has been made to include only the varieties in actual cultivation in a commercial way, or to an extent attracting the attention of nurserymen or horticultural societies, yet it is probable that some are omitted which should have been included.

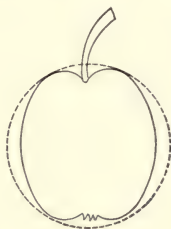
As a guide in understanding the terms used in describing the forms of pears, the outlines used by Downing and the Massachusetts Horticultural Society are copied.

TERMS USED IN PEAR DESCRIPTIONS AFTER DOWNING.

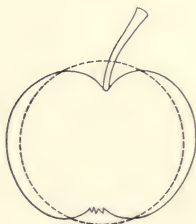
SIMPLE FORMS.



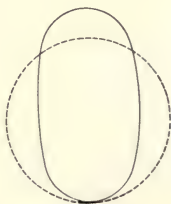
Globular.



Ovate.

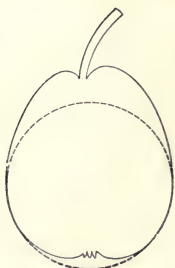


Oblate.

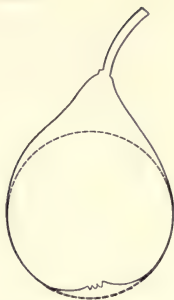


Oblong.

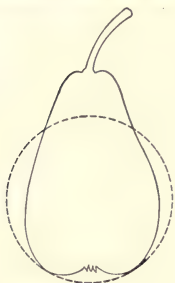
COMPOUND FORMS



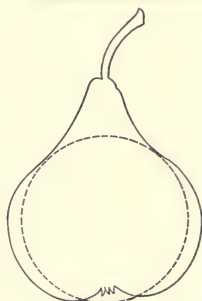
Globular, obtuse pyriform.



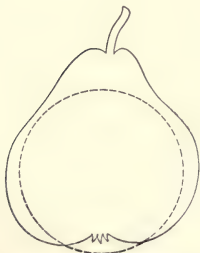
Globular, acute pyriform.



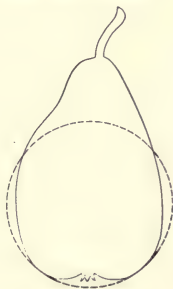
Ovate, pyriform.



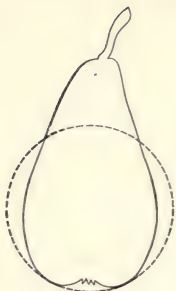
Ovate, acute pyriform.



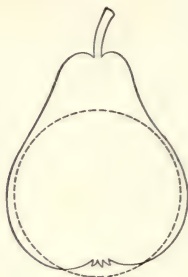
Obovate, obtuse pyriform.



Oblong pyriform.



Oblong, ovate pyriform.



Oblong, obovate pyriform.

VARIETIES OF THE PEAR.

Alamo.—A variety originating in Texas. "Not as large as the Bartlett by one-half; pale yellow in color; not as rich in flavor as the latter yet good in quality. It has proven quite valuable with us." (Munson.)

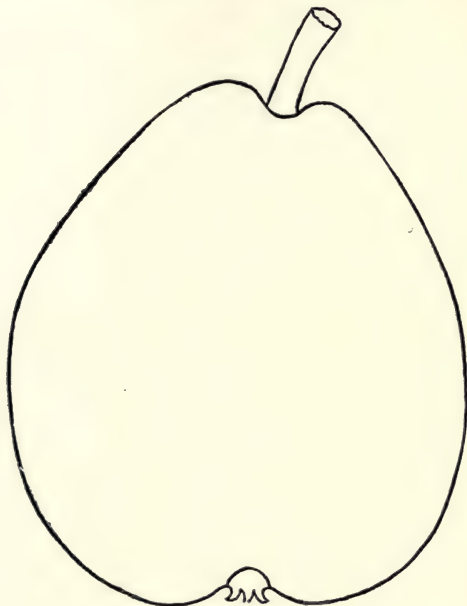
Ananas d'Été.—Medium to large, obtuse pyriform; color yellow, usually blushed; dots small, numerous; stem stout, one and one-quarter inches long, and inserted in shallow cavity beside a lip; basin shallow. Flesh fine-grained, buttery, melting, with subacid perfumed flavor, very good. Season, early autumn. Holland.

Andrews.—Quite large, pyriform, sides unequal; skin quite thick, smooth, yellowish green, with dull red cheek, and scattering dots; stalk one and one-quarter inches long, curved, and inserted in shallow depression and often on the blunt surface. Flesh greenish white, juicy, melting, with rich vinous flavor, good to very good. Season, early September. Massachusetts.

Angoulême, Duchesse d'Angoulême.—Very large, oblong obovate, with uneven knobby surface; color greenish yellow, with many streaks and spots of russet; stalk one to two inches long, stout, curved, inserted in deep irregular cavity. Flesh white, buttery, melting, juicy, with very rich flavor, very good; quality varied much by climate and soil. Season, July. France.

Anjou (Beurre d'Anjou).—Large, oblong, turbinate pyriform, regular; color greenish yellow with dull red cheek and clouding of

russet; stalk one-half inch long, stout, in shallow uneven cavity; basin shallow, even. Flesh yellowish white, fine-grained, melting;



Anjou.

flavor rich and vinous; quality best. Season, late. Popular and doubled-starred in many States across the continent. France.

Ansault.—Medium to large, roundish oblate, pyriform; stalk half to one inch long in shallow cavity; color yellow, mostly covered with russet. Flesh white, juicy, tender, buttery, melting, and aromatic; quality fair to good. Season, early autumn. France.

Archangel.—Very large, obovate, pyriform; color yellow, largely covered with russetting. Flesh sweet, vinous, juicy, perfumed; quality good. Becoming popular as a market pear for culinary use. France.

Autumn Bergamot.—Quite large, globular, obtuse pyriform; color yellow with blushed cheek; dots numerous, small, russeted; stem medium in quite deep cavity; basin broad and quite deep. Flesh buttery, melting, very good. Tree hardy in central Iowa. Russia.

Ayer.—Medium, obovate obtuse pyriform; color lemon yellow with russet patches and numerous small russet dots; stalk short, quite stout, slightly curved, inserted in large, deep, abrupt irregular cavity marked with russet wrinkles; basin medium, regular, flaring, with shallow corrugations and russetting. Flesh whitish, fine-grained, tender, juicy, very good. Season, early. Kansas.

Bartlett.—Large, oblong, obtuse pyriform; color clear yellow with blush usually on sunny side; surface of skin usually uneven; stalk one to one and one-half inches long, inserted in shallow cavity. Flesh white, fine-grained, buttery, juicy, sweet, with rich perfumed flavor, very good. Popular in nearly every fruit district of the Union. England.

Barry (*P. Barry*).—Medium, elongated, pyriform; color greenish yellow; stalk one inch long, inclined, inserted in abrupt and quite deep cavity; basin narrow, shallow, regular. Flesh whitish, juicy, melting, firm, vinous, and rich; quality better than good. Does well in Michigan but as yet not much propagated. California.

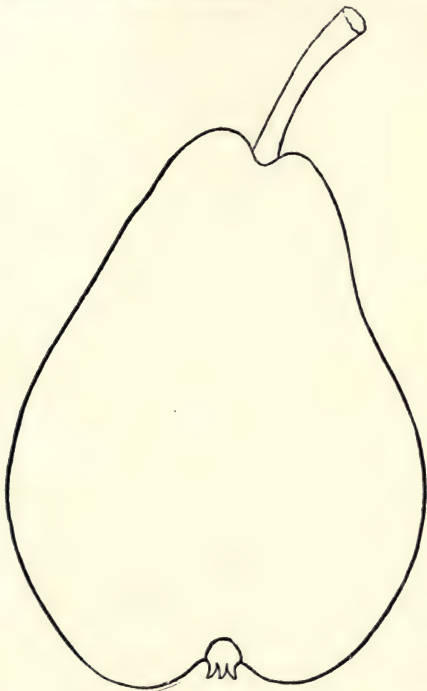
Baudry (*Fred Baudry*).—Large, oblong pyriform; color yellow with blotches of russet. Flesh yellow, tender, buttery, somewhat gritty at core; quality very good. Season, quite late winter. Quite a popular new variety east of the lakes.

Belle Lucrative.—Medium to large, conic obovate, often pyriform; color yellowish green, with some russetting; stalk about one inch long, stout, curved, and obliquely inserted in a small irregular cavity. Flesh juicy, melting, sugary, rich, delicious, very good to best. Double-starred in many States. Flemish.

Bessemianka.—Medium to large, obovate, pyriform; color yellow, with red cheek as grown in the dry air west of the lakes. Flesh juicy, sweet, tender, buttery; quality good. A very hardy variety doubled-starred in several States. Russia.

Besi de la Motte.—Medium, roundish turbinate; color yellowish green, thickly covered with brown russety dots; stalk one inch long, inserted in a small, round, shallow cavity; basin shallow, with eye small and open. Flesh white, fine-grained, melting, buttery, very

good. This variety has proven much hardier than Flemish Beauty on prairie soils of the West. Europe.

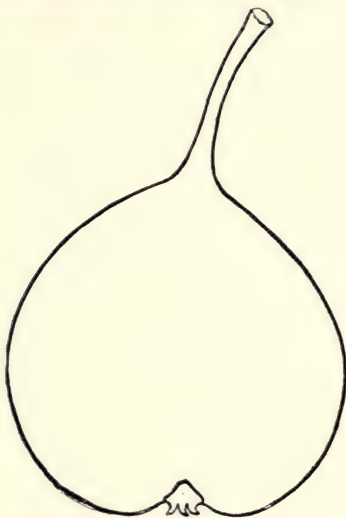


Bartlett.

Bloodgood.—Medium, obovate, nearly turbinate; color yellow, with russet dots, and net-work russeting; stalk oblique, inserted at top of neck without cavity. Flesh yellowish white, buttery, melting, with rich flavor, very good, and in some climates best. Widely disseminated and popular as a home summer variety. Long Island.

Bordeaux (*Duchesse de Bordeaux*).—Medium, roundish, nearly obtuse pyriform; color yellow, with netting and tracing of russet and

russet dots; stalks long, stout, with fleshy enlargement at base; often lipped at point of insertion. Flesh white, quite juicy, sweet, pleasant; quality only good. Season, early winter. France.



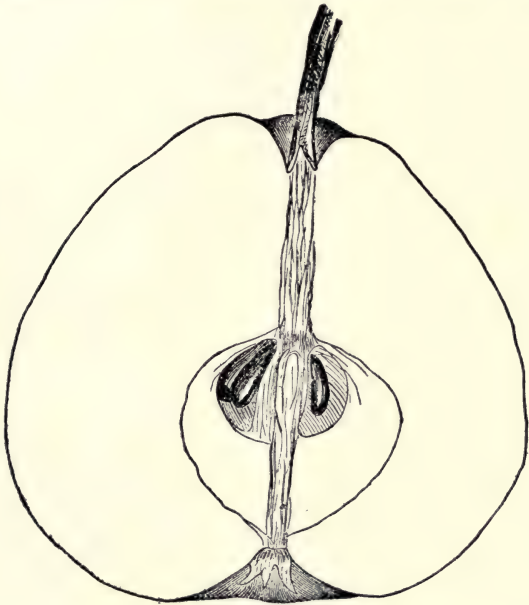
Bloodgood.

Bosc.—Large, pyriform, with quite long neck narrowed to a point at stem insertion; color yellow, with patches of russetting; stalk one and one-half inches long, slender, curved. Flesh juicy, buttery, rich, perfumed, very good to best. Widely grown in eastern States. Belgium.

Boussock.—Medium to large, oval, often obovate and slightly pyriform; skin not smooth, yellow, shaded with dull crimson, and netted with russet and russet dots; stalk one inch long, stout, and often oblique. Flesh buttery, melting, juicy, very good. Belgium.

Brandywine.—Medium in size; shape quite variable, ranging from oblate pyriform to long pyriform; skin greenish yellow, dotted and netted with russet, usually blushed on sunny side; stalk three-

quarters to one and one-half inches long, stout, often curved, and inserted at top of neck without cavity. Flesh white, juicy, melting, rather rich, very good. Extensively grown on the quince. Pennsylvania.

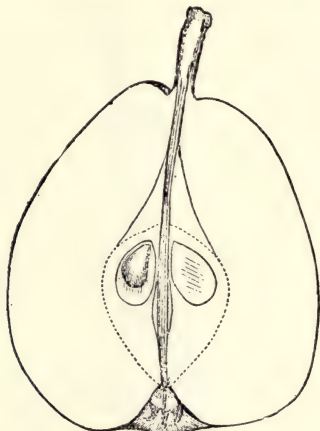


Boussock.

Brockworth Park.—Large to very large, oblong obovate; color pale yellow, slightly flushed and streaked with crimson on sunny side; stem about one inch long, stout and obliquely inserted. Flesh white, delicate, buttery, melting, juicy, rich, vinous, very good. Does well on dry upland soils in the lake regions. England.

Buffum.—Size medium, oblong, obovate, with one side enlarged; skin yellow when mature, with bright red on sunny side; dots quite

numerous; stalk one inch long inserted in narrow, shallow cavity. Flesh white, buttery, quite juicy, sweet, very good. Season, September. Popular in many States for culinary use and market. Rhode Island.



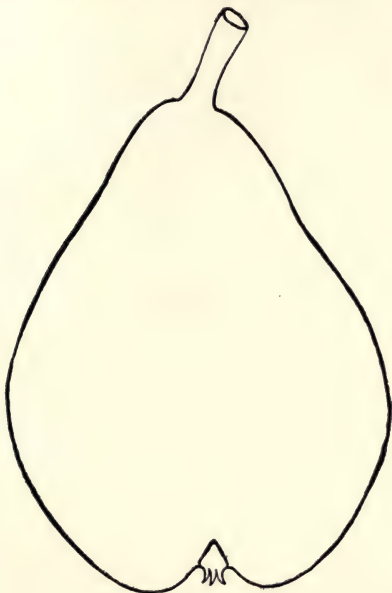
Buffum.

Chambers.—Medium, obtuse, obovate, pyriform; color light green, but yellow when ripe, with numerous brown and green dots, sunny side reddish brown; stalk one inch long, stout, set at an angle in a shallow cavity with one side raised. Flesh white, tender, quite juicy, sweet, pleasant, good. Season, early. Valuable for a near market. Does well on the quince. Canada.

Clairgeau.—Large, pyriform, nearly long obovate, with unequal sides; color yellowish brown, usually with crimson shading next the sun; dots brown; stalk short, stout, fleshy at base, oblique, and inserted at top of neck with slight trace of cavity. Flesh white, buttery, melting, and usually rich in flavor. Season late autumn. Widely grown. France.

Clapp Favorite.—Large, obovate, or ovate pyriform; stem one inch long, stout, inclined, and inserted in slight cavity; color pale yellow, marbled, and splashed with crimson, with russet patches.

Flesh white, fine-grained, juicy, buttery, melting, rich, perfumed, very good. Grown across the continent. Massachusetts.



Clapp Favorite.

Cole.—Medium to large; color bright yellow; quality good to very good. It is sold as “seedless” by some growers. It rarely shows seeds and the leathery carpels which surround the seeds of apples and pears are absent. Considerably planted in Kansas and Ohio. Kansas.

Comice, Doyenne du Comice.—Large, roundish pyriform, nearly pyramidal; color greenish yellow, and bright yellow when fully mature; in interior climates it has a fine blush in the sun; stalk short, stout, and inserted in a small cavity. Flesh white, fine-grained,

melting, sweet, very good to best. A good shipper even after it gets mellow. France.

Columbia.—Large to very large; long obovate in form, regular; color pale yellow when mature, and very smooth and fair; stalk one to one and one-quarter inches long, slender, inserted in narrow deep cavity. Flesh white, melting, buttery, and quite rich in flavor, very good. Popular market variety in Colorado and Utah. New York.

Danas Hovey.—Small to medium, pyriform, tapering towards the stem; color green, blotched and specked with russet, with pale red cheek on exposed side; stalk three-quarter to one inch long,



Danas Hovey.

stout, inclined, and inserted in uneven cavity. Flesh creamy white, melting, buttery, subacid, and rich in flavor. Season midsummer. As it is near to the Seckel in quality it is much grown in Kentucky and Tennessee for home use and market. Massachusetts.

Dearborn (Dearborn Seedling).—Small to medium; roundish pyriform, regular; color light yellow with small dots; stem one to one-quarter inches long, curved, and inserted in slight cavity; basin very shallow. Flesh white, juicy, melting, sweet, sprightly, very good. Season early. A choice amateur variety. Massachusetts.

Dempsey.—Large, oblong, obovate, pyriform; color yellowish green with brownish-red cheek; stem one inch long in a fleshy base without much show of cavity. Flesh white, fine-grained, tender, quite melting, sweet, very good. Season late autumn. A seedling of Bartlett. Canada.

Desportes (*Andre Desportes*).—Medium, obovate, obtuse pyriform, oblique; color greenish yellow with areas of fawn and bronze on exposed side. Flesh yellowish white, fine, melting, granulous at the core, sugary, acid, very good. Season, very early. Often grown on the quince. France.

Diel (*Beurre Diel*).—Large to very large, obovate; color yellow at maturity with numerous large brown dots and patches of russet; stalk stout, curved, and from one to one-quarter inches long set in uneven cavity. Flesh creamy color, quite fine except at core, buttery, sweet, aromatic, and when well kept delicious in flavor, very good. Much grown for market in New York and Michigan. Belgium.

Directeur Alphaude.—Very large; color yellowish green with russet dots; flesh firm, fine-grained, sugary, rich. Season, winter. Succeeds well in western New York.

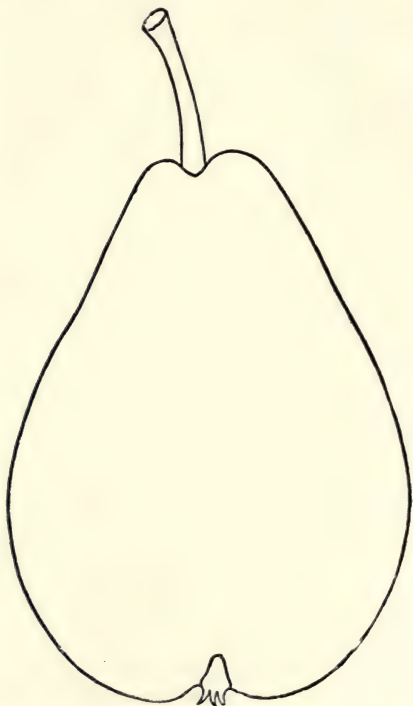
Dix.—Large, oblong, or long pyriform; color deep yellow at maturity, with russet dots and russet around the stem; skin somewhat rough; stem short, stout, thickened at each end, and set obliquely with slight depression at top of neck; basin narrow and very shallow. Flesh a trifle coarse, but juicy, rich, sugary, melting, delicious, very good to best. Fruit often cracks except in drier inland climates with less moisture of air. Massachusetts.

Dorset.—Large, obovate obtuse pyriform; color golden yellow with bright red cheek. Flesh juicy, melting, sweet, very good. Season, winter. A new variety giving much promise east of the lakes.

Drouard (*President Drouard*).—Large, roundish obovate, obtuse, rather irregular; color yellow with netting and washings of russet; stalk three-quarters of an inch long, quite stout, inserted in deep narrow irregular cavity. Flesh creamy white, tender, buttery, sweet, perfumed, good. An autumn variety much liked in Michigan and east of lakes. Europe.

Duhamel (*Duhamel du Monceau*).—Medium, obovate, obtuse pyriform; color yellow, with many russet specks and patches of gray or cinnamon russet; stem one and one-quarter inches long, stout, fleshy at point of insertion in very slight cavity; basin narrow,

shallow, often corrugated. Flesh yellow, melting, juicy, very good. Season, early winter. A good tree and good bearer in lake region. France.



Dix.

Dupont (*Pennington*).—Medium to large, obovate, obtuse pyriform; color yellow with numerous small brown dots; stalk one and one-quarter inches long, erect, very stout, with swelling at point of insertion at top of neck; basin very shallow; calyx open. Flesh

yellowish white, tender, juicy, melting, very good. An Illinois variety doing well on ridge land in central Iowa.

Early Duchess (*Duchess Precoce*).—Large, obovate pyriform; color yellow, usually with blushed cheek, and showing numerous russet dots with traces, blotches, and areas of brownish russet; stalk one inch long, usually inclined, and with fleshy formation at insertion in narrow shallow cavity; basin shallow, abrupt, regular, with show of ribbing. Flesh whitish, juicy, tender, fine-grained, buttery, quality very good. Season, October. Does well around the lakes. Europe.

Early Harvest.—Large, golden yellow, with bright red cheek; quality hardly good. Yet it is grown quite extensively for market on account of its size, beauty, and the hardiness and free bearing of the tree. Ripens one month earlier than Bartlett. Ohio.

Easter Belle.—Medium, obovate pyriform, somewhat obtuse; color pale yellow, usually with bright red cheek; some patches of russet, and many russet dots; stalk short, stout, inclined, and usually fleshy at point of insertion in slight cavity. Flesh whitish yellow, somewhat coarse at core, half melting, very sweet, rich, very good. Grown west and east of the lakes. Maine.

Easter Beurre.—Large, roundish obovate, obtuse; color yellowish green, with many russet dots, and often with brown russety cheek; stalk short, stout, inserted in quite deep obtuse cavity. Flesh white, fine-grained, buttery, juicy, melting, very good. Grown in the eastern States and on the Pacific coast. Europe.

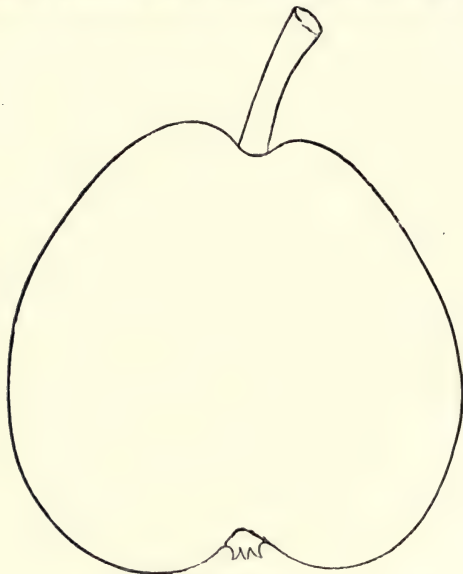
Edmonds.—Medium to large, obovate, surface not regular; stem long, stout, and fleshy at base, set in a moderate knobby cavity; basin ribbed or uneven. Flesh yellowish white, fine-grained, melting, sweet, very good. Season, September. New York.

Eliot (*Eliot's Early*).—Medium in size, pyriform; bears in clusters of three to six; color yellowish green with red striping. Flesh juicy, vinous, very good. Season, early. A new variety, doing well east of the lakes.

Elizabeth, Manning's.—Medium, roundish obovate; color pale yellow with red cheek and often flecked with russet and numerous dark spots; stalk one-half to one inch long, inclined, inserted in small round cavity. Flesh white, juicy, fine-grained, buttery, sweet, very good. Productive and popular in the eastern and southeastern States. Belgium.

Esperen.—Medium to large, roundish obtuse pyriform; color

light green, well covered with russet in patches, specks, and dots; stalk one and one-quarter to one and one-half inches long, inclined and inserted in shallow slightly plaited cavity; basin deep, abrupt.



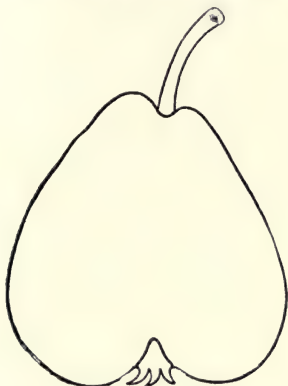
Easter Beurre.

Flesh creamy white, juicy, tender, melting, vinous, yet quite granular. Season, autumn. Does well in the lake region. Belgium.

Eugene Appert.—Medium roundish oblate, inclining to obtuse pyriform; color greenish yellow, with netted and patched areas of russet, and numerous russet dots; stem variable from short to long, quite slender, inserted in medium smooth cavity; basin small or medium, nearly smooth. Flesh white, juicy, melting, sweet, rich, with some aroma; very good. Season, September. Considerably grown as a dwarf. France.

Fitzwater.—Medium to large, obovate obtuse pyriform; color

yellow, with blotches, areas, and spots of russet; stalk short, stout, inclined, with fleshy growth at point of insertion without cavity; basin narrow, shallow, quite abrupt. Flesh creamy white, juicy,



Elizabeth, Manning's.

fine-grained, buttery, melting, sweet; quality good. Season, autumn and early winter. Does well near the lakes and in the southeastern States. New York.

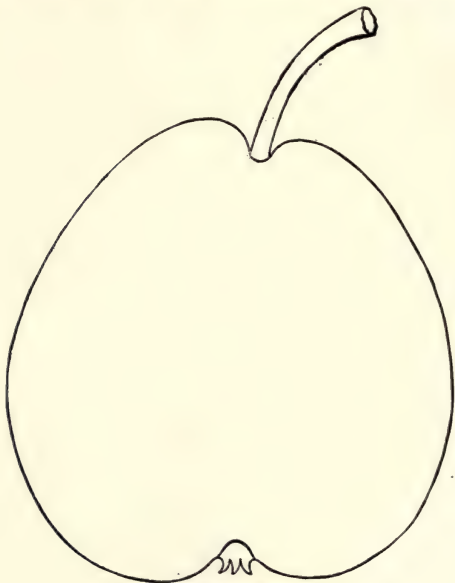
Flemish Beauty.—Large, obovate, obtuse, slightly pyriform; skin a little rough, pale yellow, mostly covered with marblings and areas of light russet becoming reddish brown at maturity; stalk one to one and one-half inches long, quite stout, curved, and inserted in very narrow, deep, regular cavity. Flesh yellowish white, a little coarse but juicy, melting, sweet, rich, and highest in flavor, very good. Season, September. Starred across the continent. Belgium.

Fox (*B. S. Fox*).—Large, russeted with yellow. Flesh fine-grained, juicy, vinous; quality said to be about like that of Anjou. Season, October. A new variety, coming into notice in western New York.

Frederick Clapp.—Medium to large, roundish, nearly obovate, often irregular; color bright yellow with brown patches; stalk one inch long, stout, inclined, and inserted in small, shallow, irregular

cavity. Flesh whitish yellow, juicy, fine-grained, buttery, melting, rich, good to very good. Massachusetts.

Gakovsky.—Medium in size, pyriform; color greenish yellow, with indistinct dots; stalk one and one quarter inches long, with fleshy



Flemish Beauty.

ring where inserted in slight cavity. Flesh dingy white, fine-grained, buttery, juicy, mild, vinous, but not very rich. Quality only good. The principal merit of this variety is its extreme hardness. It can be grown on ridge land far north. Russia.

Gansels Seckel.—Small to medium, oblate, and considerably depressed; color yellow, with rough and uneven skin, mostly covered with thin russet; stalk short, stout, inserted in broad shallow cavity; basin broad and shallow. Flesh coarse, buttery, juicy, melting,

quite vinous, with rich aromatic perfumed flavor, very good. Said to be a seedling of Seckel. England.

Garber.—Large, roundish oblong, pyriform; color brownish yellow with red on sunny side. Flesh firm, granular, juicy, acid, poor. Grown commercially in large quantity and shipped in barrels for culinary use. Pennsylvania.

Ghislain (*St. Ghislain*).—Medium, obtuse pyriform or turbinate; color bright yellow, with greenish tinge in spots, and blushed cheek; stalk one to one and one-half inches long, curved, with rings at insertion in cavity. Flesh white, juicy, melting, rich, vinous, very good. Grown for dessert use in the southeastern States, and in Utah. Belgium.

Giffard (*Beurre Giffard*).—Medium to large, pyriform, tapering toward the stem; color greenish yellow, with marbling of red where exposed; stalk quite long, curved, and inserted at top of neck. Flesh white, melting, juicy, with a vinous flavor and pleasantly perfumed. Ripens early; very good. Widely grown for market. France.

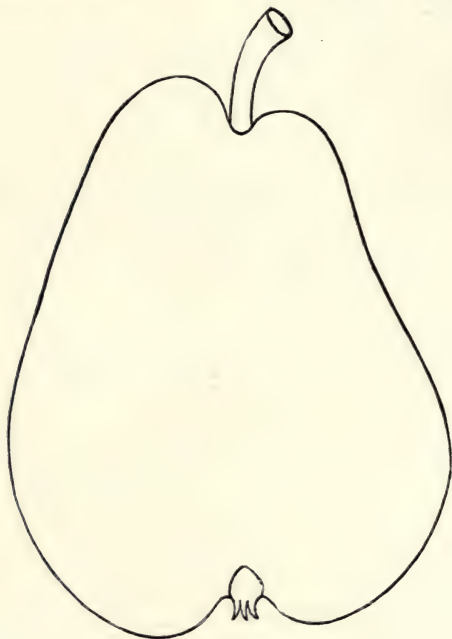
Glout Morceau.—Large, obovate pyriform, unequal, often ribbed; color green and greenish yellow at maturity; stalk one and one-quarter inches long, stout, and inserted at one side of neck. Flesh white, fine-grained, buttery, melting, rich, very good usually if, well handled. Flemish.

Goodale.—Large, oblong, obovate, pyriform; color light yellow, with crimson and light red where exposed, with some netting and patches of russet; stalk short, curved, stout and inserted in quite deep inclined cavity with one side of neck highest. Flesh whitish, juicy, melting, very good. Maine.

Grand Isle.—Medium, roundish oblong, obtuse pyriform; color light yellow with many russet dots; skin very smooth; stalk three-quarters to one inch long, rather slender, somewhat inclined, and inserted in small regular cavity. Flesh whitish, half fine, juicy, melting, vinous, very good. Season, autumn. Tree hardier than the average. Vermont.

Gray Doyenne.—Medium in size, ovate to obovate in form; color cinnamon russet with red in the sun; skin smooth; stalk short, inserted in narrow abrupt cavity. Flesh white, fine-grained, buttery, melting, rich; quality best. Popular in many States for home dessert use. France.

Groveland.—Large, obovate, obtuse, pyriform; color greenish yellow, with brownish cheek, and most of the surface washed, netted, and specked with russet; stalk short, stout, inclined, inserted in medium, abrupt, regular cavity; basin narrow, shallow, regular. Flesh creamy white, juicy, tender, buttery, quite vinous, good.



Goodale.

Season, autumn. Grown in Alabama and southeastern States. America.

Hardy (*Beurre Hardy*).—Large, obovate, obtuse pyriform; color light green covered with light russeting and shaded with brownish red; dots numerous; stalk one inch long, inclined, stout, inserted

in small quite uneven cavity. Flesh buttery, melting, juicy, vinous, perfumed, with slight astringency under the skin; very good. Season, early autumn. Europe.

Heyst (*Emile de Heyst*).—Large, oblong, obovate, pyriform, irregular; color clear yellow, with brownish orange-colored cheek and netting and patches of russet; numerous large russet dots. Flesh yellowish white, fine-grained, juicy, melting, vinous, very good to best. Season late autumn. Has not been widely cultivated as it fails to do well except on certain soils. Belgium.

Hoosic.—Large, roundish, inclined to obtuse pyriform; color greenish yellow, with deep yellow in the sun and traces and nettings of russet and many russet dots; stem long, curved, and set at an incline in a small cavity; basin quite broad and deep and not wholly even. Flesh whitish, half fine, juicy, melting, quite rich, aromatic, very good. Popular amateur variety, also grown for market. Massachusetts.

Howell.—Large, roundish obovate, regular; color rich yellow with traces of red in the sun, and numerous prominent grayish dots; stalk one inch long, stout and set in narrow shallow cavity. Flesh white, juicy, vinous, sprightly, with few seeds, very good. Popular across the continent. Connecticut.

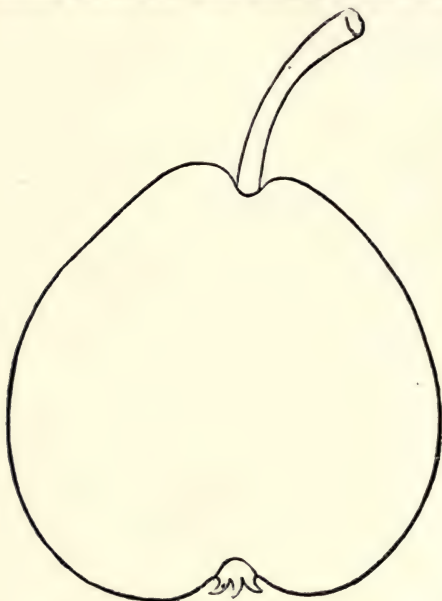
Idaho.—Large, nearly round, regular; color golden yellow; dots numerous; stalk short, largest at upper end, inserted in irregular and quite deep cavity. Flesh melting, juicy, vinous, only good in quality. Season, early autumn. Double starred in Colorado, Utah, and Idaho. Nevada.

Japan Russet (*Japan Golden Russet*).—Medium, flat, apple-shaped; color yellow, overspread with golden russet. The handsome fruit grows in clusters on small round-topped trees with large shining leaves. As a lawn tree in the background it is ornamental and the fruit has value as grown at the West for culinary use. Japan.

Jones (*Jones Seedling*).—Medium, obovate, pyriform; color yellow shaded with russet and bright crimson in the sun; stem one and one-quarter inches long, inclined, and fleshy at insertion with the flesh without cavity; basin broad, shallow, uneven. Flesh white, quite coarse, granular, buttery, sugary, with vinous flavor; quality fair to good. Season, autumn. A vigorous hardy tree. Pennsylvania.

Josephine d'Malines.—Medium, roundish oblate, slightly pyri-

form; color greenish yellow, russet in patches and varied netting, with numerous brown dots; stalk enlarged at ends, curved, and

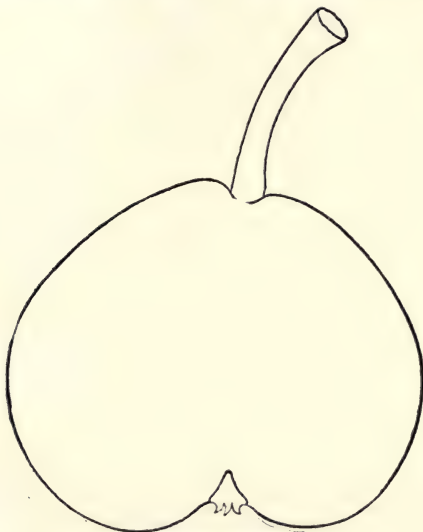


Howell.

inserted in shallow small cavity. Flesh pinkish white, juicy, melting, sweet, with rich aroma, very good. Season, winter. Popular in several States. Belgium.

Kieffer.—Large, oval, narrowing at both ends, but variable in shape; often roundish and nearly obtuse pyriform; color yellow with brighter shade in sun; patches and netting of russet, and brown russet dots, often nearly covering the yellow ground; stalk rather short, stout, and inserted in medium cavity. Flesh whitish, somewhat coarse, juicy, half melting, sweet, only good. Double starred in many States as a market and kitchen variety. A Chinese hybrid.

Kingsessing.—Large, obtuse pyriform; color greenish yellow with numerous small green or gray dots; stem quite long, curved, and fleshy at insertion in broad uneven cavity; basin large, irregular, corrugated. Flesh whitish, quite coarse, juicy, buttery, melting



Josephine d'Malines.

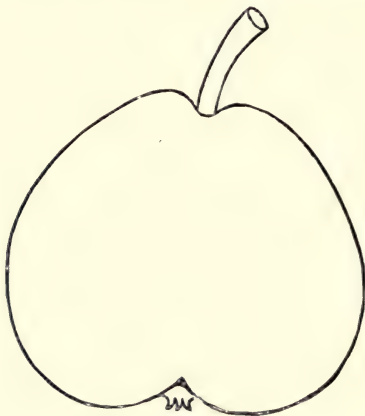
sweet, perfumed, very good. Grown in Ohio and the southeastern States. Pennsylvania.

Kirtland.—Small to medium, obtusely obovate, sometimes pyriform; color bright yellow, mostly covered with light russet, with red streaks in the sun; stalk short, stout, inserted in small cavity; basin shallow and broad. Flesh melting, juicy, sweet, aromatic, very good. Season, early fall. Grown for dessert use mainly. Ohio.

Koonce.—Medium, pyriform; color greenish yellow with bronze cheek, and small russet dots; stem one inch long, inserted in medium-

sized regular shallow cavity. Flesh white, granular, flavor poor. Used for market and kitchen in Illinois. Illinois.

Krull.—Medium, yellow, with bloom; skin thick. Flesh melting, juicy, good. Keeps into winter. Grown in Pennsylvania and New Jersey.



Kirtland.

Lady Clapp.—Large, yellow with smooth skin. Flesh juicy, melting, vinous, quality very good. Season last half of September, following the Bartlett. A promising new variety in Eastern States.

Langelier.—Medium in size, obovate, pyriform; color pale yellow with some russeting; stalk short in small cavity; basin quite irregular. Flesh juicy, buttery, melting, with sweet rich flavor, quality good. Ohio.

Lawrence.—Medium to quite large, form obovate, and obtuse pyriform, regular; color lemon yellow with areas of russet, and many small brown dots; stalk rather short, stout, and set in an irregular russeted cavity; basin broad, shallow, ribbed and russeted. Flesh whitish, juicy, melting, sweet, aromatic, quality very good. Season, winter. A popular hardy and profitable variety in several States. New York.

Lawson.—Medium to large, obovate, inclined to pyriform; color yellowish with red cheek and scattering brown specks; stalk three-quarters of an inch long, stout, fleshy, inclined, and inserted in slight cavity; basin broad, shallow, slightly corrugated. Flesh whitish, quite coarse, breaking, and sweet, quality fair to good. A culinary market variety grown in the South. New York.

Le Conte.—Large, roundish, oblong, turbinate pyriform; color yellow with red on sunny side. Flesh melting, sweet, perfumed, vinous, quality only good. Much grown at the South for the northern market. Season, midsummer. Chinese seedling.

Leroy (*Madame Andre Leroy*).—Large to very large, oblong obovate, or pyriform; color greenish yellow entirely covered with gray russet; stem short, stout, obliquely inserted with a fleshy base at the extremity of the neck. Flesh white, melting, juicy, vinous, very good. Season very late. Usually grown on quince. France.

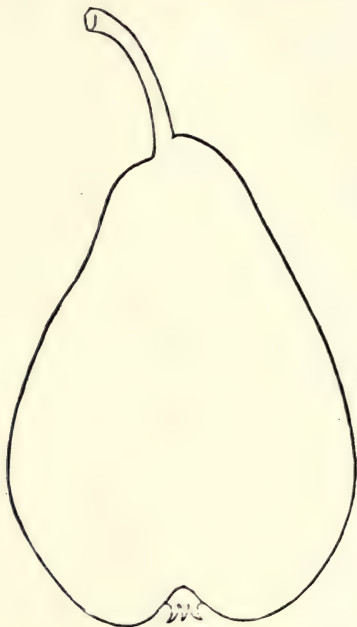
Lexington.—A variety grown in Texas and the South. Mr. T. V. Munson's description: "About the size of Bartlett and much like it. It ripens one week later than Bartlett and is equal to it in quality. It has never blighted since I knew it until this season when a few twigs were attacked when many other varieties were killed. It blooms later than most varieties and only bears when cross-pollinated by intermingling varieties."

Lincoln.—Large, obovate pyriform, surface quite smooth, greenish yellow, with traces of russet and brown dots; stem medium in length, quite stout, fleshy at insertion with the regular small cavity; basin regular, medium, with shallow corrugation. Flesh whitish, fine-grained, buttery, very juicy, vinous, good to very good. A hardy prairie variety rapidly coming into public notice. Illinois.

Louise *Bonne de Jersey*.—Large, oblong pyriform, with sides unequal; skin glossy, pale green, with brownish red in the sun; dots gray and numerous; stalk half an inch long, curved, and inserted at one side of neck without cavity; basin shallow, uneven. Flesh greenish white, juicy, melting, with very rich flavor, good to very good. Season, autumn. Grown across the continent. France.

Macomber.—Medium, pyriform; color greenish yellow with bright red cheek; dots numerous, small, russet; stalk short, quite stout and fleshy at insertion in medium cavity, with convex slope and russetting; basin medium, regular, flaring, with russet markings. Flesh whitish, with greenish core line, buttery, melting, juicy, sweet,

rich, very good. A Vermont variety, doing well in most places where tested.



Louise Bonne de Jersey.

Lodge (*Smith's Bordonave*).—Medium, pyriform, tapering to the stem, with sides unequal; color greenish brown, well covered with patches of russet; stem one and one-quarter inches long, inserted obliquely at the top of the neck, without cavity. Flesh whitish, juicy, melting, rich, with pleasant acid; core gritty; quality very good. Grown mainly in Pennsylvania, where it originated. Season, September.

Longworth.—Medium to large, nearly round, bergamotte-shaped, yellow, with warm blushed cheek. Flesh rather coarse, but juicy,

sugary, and excellent in flavor. Season, middle of September. Originated in Dubuque, Iowa. The tree has proven very hardy in Iowa.

McLaughlin.—Large, pyramidal pyriform, and often obovate; color greenish yellow, and yellow when ripe; skin rough, with some russeting; stalk short, oblique, and inserted at surface without cavity. Flesh juicy, melting, sweet, rich, perfumed, very good. Season, early winter. Grown east of the lakes. Maine.

Madame Millet.—Very large, short obovate, or turbinate, and rather uneven in outline; color yellow, nearly covered with light russet; stem short, stout, obliquely inserted with the axis of the fruit, without depression; eye open, set in a wide and quite deep basin. Flesh tender, melting, juicy, richly flavored. Keeps into winter. Often grown as a dwarf. Belgium.

Madame Treyve.—Medium, obovate pyriform; color pale yellow, with bright red cheek, some russet, and numerous brown dots; stem slender, inserted in narrow cavity; basin narrow, round, regular. Flesh white, melting, juicy, rich, sweet, very good. Season, September. Quite a favorite on the quince. France.

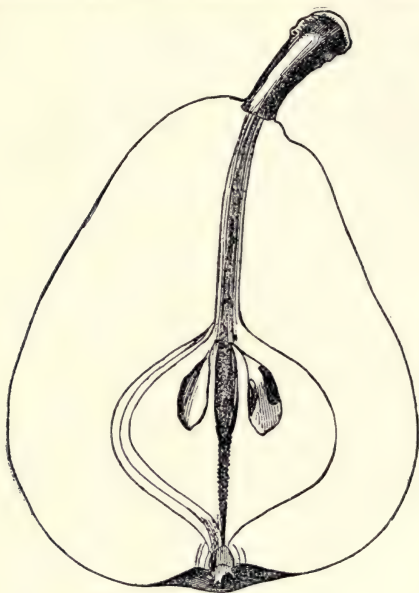
Madeleine (Magdelen).—Medium to small, obovate, slightly pyriform; color yellowish green, often with brownish shade where exposed; stalk one and one-half inches long, slender, inserted in very narrow small cavity; basin shallow. Flesh juicy, melting, slightly acid, with delicate rich flavor, very good. France.

Marguerite (Petite Marguerite).—Medium, oblate, obtuse, pyriform, with uneven surface; color greenish yellow and pale yellow when mature, with brownish red cheek and numerous greenish dots; stalk long, slightly curved, inserted in a narrow quite deep cavity; basin quite large and somewhat corrugated. Flesh white, half fine, buttery, juicy, melting, sweet, very good to best. A dessert variety, doing well near the lakes and in Ontario, Canada. France.

Marie Louisa.—Large, pyriform, with curved axis, body somewhat oblong; color greenish yellow when mature, with some russeting; stalk one and one-half inches long, quite stout, usually oblique, inserted without cavity. Flesh buttery, melting, vinous, quality variable, but usually very good. Belgium.

Merriam.—Quite large, nearly round, but approaching oblate; color yellow, with some russeting; stalk short, quite stout, inserted in small cavity, with one side enlarged; basin shallow and corrugated.

Flesh yellowish, coarse, melting, juicy, quite vinous, but musky in flavor, good to very good. Popular in New England. Massachusetts.



McLaughlin.

Mongolian (*Mongolian Snow*).—Large, pyriform, inclined to ridging toward the apex; color greenish yellow with blushed cheek, and many russet dots; stalk from one to one and one-half inches long, stout, set in broad shallow cavity, raised on one side, giving the stem a decided inclination; basin quite deep, ridged, corrugated. When ripened indoors the flesh is tender, melting, juicy, good. It is the best in quality of the oriental varieties yet tested. Fruit usually in clusters. Iowa.

Mount Vernon.—Medium to large, roundish, obtuse pyriform; color yellowish, netted, and nearly covered with light yellowish



Mongolian Snow.

(To face page 256.)

russet; stalk short, inclined by raised lip. Flesh yellowish, granular, juicy, melting, quite vinous, quality good. Grown in several States. Massachusetts.

Napoleon.—Medium to large, conic pyriform, obtuse, but variable in shape; color yellowish green when mature; stalk one-half to one inch long, inserted in slight cavity, with raised lip on one side. Flesh white, melting, juicy, sweet, refreshing, good. Grown in southeastern States. Belgium.

Ogereau (*Anna Ogereau*).—Large, pyriform, but often obovate; color yellow, nearly covered with russet and numerous russet dots; stalk one inch long, stout, fleshy at twig connection, inserted in flat, russeted, and lipped cavity; basin medium, flaring, furrowed, and russeted. Flesh greenish white, granular, tender, juicy, good. Season, early September in Michigan. Popular in localities. France.

Olivier des Serres.—Medium to large, roundish. Flesh tender, juicy, melting, very good to best. Season, quite late winter, keeping as well as Josephine of Malines.

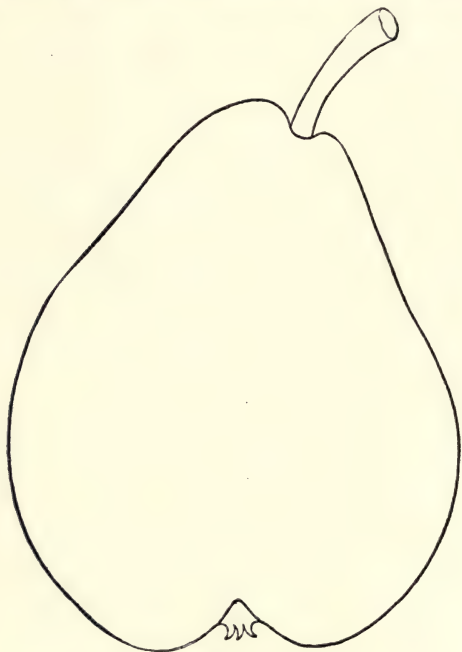
Onondaga (*Swan's Orange*).—Large to very large, obovate and usually oblate pyriform; color rich yellow when ripe, with russet dots; stalk one inch long, stout, inclined, often curved, and inserted in slight cavity with lips at one side; basin narrow, plaited, shallow. Flesh whitish, juicy, buttery, melting, slightly granular, quality good to very good. Season, autumn. A valuable market and dessert variety in several States. Connecticut.

Osband Summer.—Small, roundish, obovate pyriform; color yellow with numerous greenish and brown dots; rosy cheek in the sun, and russet in basin and cavity; stalk three-quarters to one inch long, inserted in abrupt cavity; basin broad, shallow. Flesh white, juicy, melting, with rich sweet flavor very good. Widely grown across the continent. New York.

Ott.—Small, roundish obovate in form; color greenish yellow with considerable russetting, and often a mottled red cheek; stalk one to one and one-quarter inches long, inserted in very small cavity. Flesh melting, rich, perfumed, with rich flavor like that of its parent the Seckel, very good. Much grown in Delaware.

Paradise (*d'Automne*).—Large, oblong obovate, and acute pyriform; color yellow, mottled and very often covered with bright cinnamon-colored russet; surface of skin uneven; stalk one and one-half inches long, enlarged at both ends, curved, and inserted at top

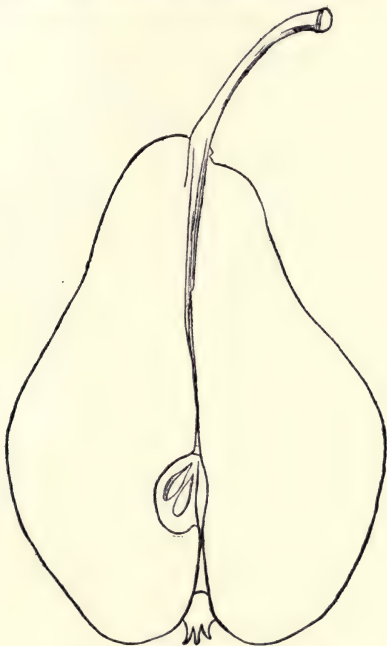
of neck usually by fleshy folds; basin abrupt with elevations around it. Flesh quite fine, sometimes granular, juicy, melting, rich, vinous, very good. Season, autumn. Grown east of lakes. Belgium.



Onondaga.

Paul Ambre.—Medium, roundish, or roundish oval; color greenish yellow, often shaded and mottled with crimson in the sun, and frequently the surface is netted with russet and numerous russet dots; stem medium, set in small cavity; basin shallow, smooth. Flesh whitish, juicy, buttery, melting, sweet, very good. Season, October. Often grown on the quince. Belgium.

Pitmaston (*Duchess*).—Very large, oblong, obovate, slightly pyriform; color yellow with light russet near the stalk and many russet dots and specks over the whole surface, which is somewhat



Paradise d'Automne.

uneven; stalk short, quite stout, in small uneven cavity. Flesh yellowish, juicy, melting, buttery, sprightly, vinous, very good. Grown under the name of *Duchess* by several nurserymen. Much like *Angouleme* but a better tree on varied soils and in varied climates. Europe.

Pound (*Winter Bell*).—Large to very large, pyriform; color yellowish green with brown cheek that changes to yellow and red

with keeping; dots numerous; stalk two inches long or more, stout, curved, and inserted at top of neck without cavity. Flesh firm, solid, granular. Only used for canning and stewing. When cooked its red flesh is attractive and good. Quite widely grown for market. Europe.

President.—Very large, roundish obovate, quite irregular; color greenish yellow with pale red cheek; russeted at base of stalk, and russet and russet dots over whole surface; stalk short, stout. Flesh yellowish white, rather coarse, juicy, somewhat vinous, good. Season, autumn. Grown east and west of lakes, and south, for culinary use and market. Massachusetts.

President Mas.—Large, oblong obovate obtuse pyriform; color greenish yellow with some patches and traces of russet. Flesh yellowish white, fine, juicy, melting, buttery, sweet, very good. Season, early winter. Belgium.

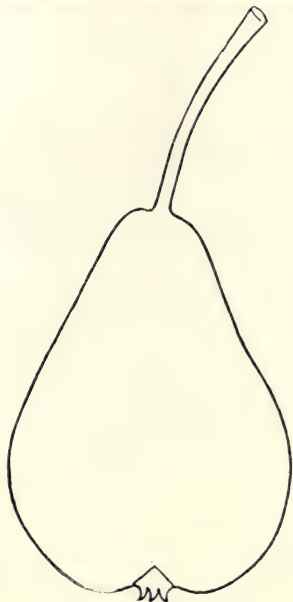
Reeder (*Doctor Reeder*).—Large, roundish ovate, obtuse pyriform; color light yellow with numerous russet dots and patches of russet, especially around the basin; cheek faintly blushed with red; stalk one and one-half inches long, quite stout, and fleshy at point of insertion without cavity; basin broad, shallow, and regular. Flesh white, juicy, buttery, melting, vinous, very good. Usually grown as Doctor Reeder. New York.

Rossney.—Medium to large, oval, pyriform; color creamy yellow with crimson blush; stem short, quite stout, inserted at top of neck into slight cavity; basin medium, ridged. Flesh yellow, fine-grained, melting, juicy, sweet, very good. Season, two weeks later than Bartlett and about like it in hardness of tree. Utah.

Rostiezer.—Small to medium, obovate, oblong pyriform; color yellowish green with reddish brown on sunny side, and traces of thin russet; stalk one and one-half to two inches long, slender, inserted in slight cavity; basin slight. Flesh juicy, melting, sweet, perfumed; quality best. It is often received from Colorado and Utah as the "Early Seckel." Europe.

Rutter.—Quite large, roundish, pyriform; color yellow, sprinkled, and netted with russet and small irregular dots; stalk one inch long, stout, inclined, curved, and inserted in narrow abrupt cavity; basin shallow and broad. Flesh white, quite juicy, half fine, buttery, with sweet vinous flavor, quality good. Double or single starred across the continent. Pennsylvania.

Sapieganka.—Medium, roundish obtuse pyriform; color green, with blushed cheek; stem short, upright, in very shallow cavity; basin



Rostiezer.

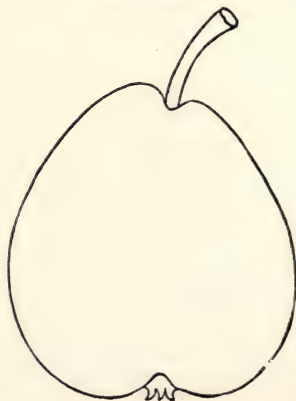
wide and somewhat deep. Flesh fine, melting, good. Season, middle of September in Iowa. Russia.

Sarah.—Medium, roundish obovate pyriform; color greenish yellow, netted and clouded with russet and sprinkled with brown dots; stem medium, somewhat inclined, set in slight depression by ring or lip; basin shallow, uneven. Flesh white, fine, juicy, melting, sweet, rich, aromatic, very good. Popular as a dwarf. Massachusetts.

Seckel.—Small, obovate, regular; color when ripe yellowish brown, with russety red cheek; stalk half an inch or more in length,



Sapieganka.

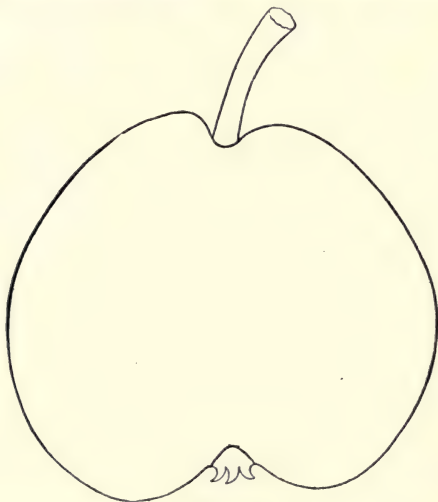


Seckel.

inserted in slight cavity. Flesh whitish, buttery, melting, very juicy, with rich spicy flavor; quality best. Widely grown on account of its unexcelled quality. Pennsylvania.

Seneca.—Large, obovate pyriform; color light yellow, with blushed cheek, green mottling, and black dots on shady side; stem near two inches long, flattened at junction; neck with fleshy ridge; basin large, irregular. Flesh white, vinous, sprightly, very good. Season, autumn, six weeks later than Bartlett, which it somewhat resembles, but it has far better color.

Sheldon.—Large, roundish, obtuse obovate; color greenish yellow, covered largely with thin russet; some show of crimson where exposed, and numerous russet dots; skin thick and rather harsh;



Sheldon.

stalk three-quarters of an inch long, inserted in quite a deep cavity; basin broad and quite deep. Flesh whitish, juicy, melting, sweet, vinous, and aromatic, very good. Very extensively grown across the continent. New York.

Smith.—Large, roundish ovate; color yellow with red where exposed. Flesh tender, vinous, astringent, scarcely good. Grown South quite extensively and sent North in barrels for culinary use. Origin not known.

Souvenir (*Souvenir du Congress*).—Large to very large, obovate obtuse pyriform; color yellow when ripe, with bright carmine in the sun, and many brown dots; russeted at the stem; stalk three-quarters of an inch long, stout, much inclined, and inserted in flesh without cavity. Flesh white, quite coarse, slightly perfumed, vinous; quality good. Now quite widely grown east of the lakes. France.

Sterling.—Medium to large, nearly round, somewhat turbinate; color yellow, netted with brownish russet, with bright scarlet cheek; stalk one to one and one-quarter inches long, inclined, curved, and inserted in skin without much show of cavity. Flesh white, juicy, fine-grained, crisp, sweet, rich; quality good. Grown east of the lakes. New York.

Stevens Genesee.—Large, nearly round; color bright yellow; stalk one inch long, stout, thicker at base, and inserted in a small cavity. Flesh white, nearly buttery, rich, aromatic, very good. Season, early fall. Quite extensively grown east of the Great Lakes. New York.

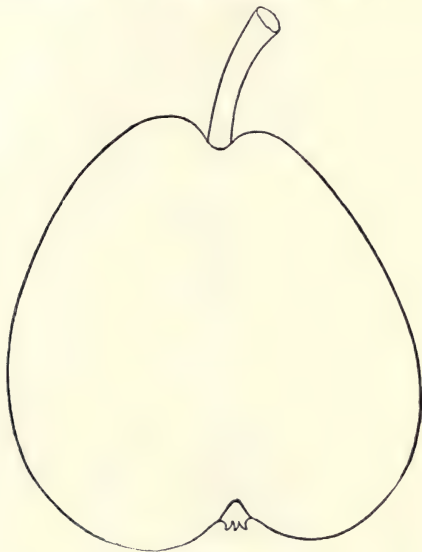
Sudduth (*Birkett*, possibly).—Size medium, obovate oval; skin smooth; color green, with russet patches and numerous small brown dots; stalk one and one-half inches long, slender, and inserted in medium-sized abrupt furrowed cavity; basin medium-sized, irregular, corrugated with peculiar raised points. Flesh whitish, quite fine, tender, juicy, almost sweet, good. Season, September. This new variety is gaining a record for longevity of tree on prairie soils not wholly adapted to pear-growing. Illinois.

Summer Doyenne (*Doyenne d'Été*).—Small, roundish, or roundish turbinate; color greenish yellow, changing when ripe to lemon yellow, with red cheek and many gray dots; stem one to one and one-quarter inches long, quite stout, somewhat oblique, and set in very shallow cavity; basin shallow and corrugated. Flesh white, melting, juicy, sweet, good to very good. Specially popular in New York and Massachusetts. Belgium.

Superfin.—Medium to quite large, roundish obovate, with narrow neck tapering to the stem; color greenish yellow, with considerable russet and brown cheek. Flesh juicy, melting, with rich pleasant

flavor, good to very good. Much grown on the quince as a dwarf in several States. France.

Thérèse Appert.—Medium to large, pyriform, rounded toward the basin and tapering to the stem by two deep concave curves; color yellow, mottled with areas of green, and well covered russet dots; cheek mottled with crimson; stem short, fleshy, inserted without depression; basin also very slight depression. Flesh tender, buttery,

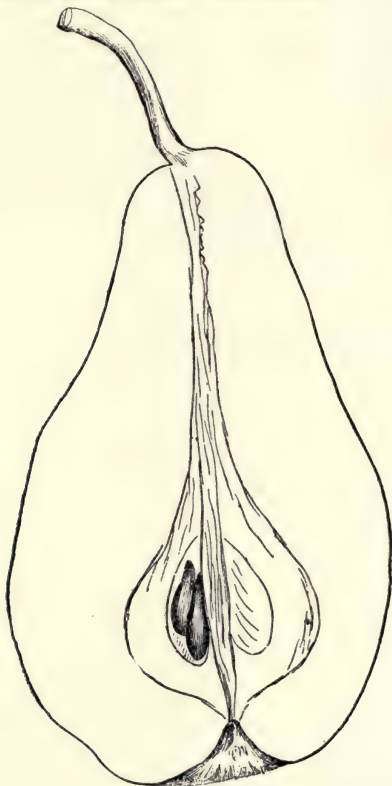


Urbaniste.

melting, sprightly, vinous, very good. Season, September. Often grown on the quince. France.

Tyson.—Small to medium, acute pyriform in shape; color bright yellow when ripe, slightly russeted, with crimson cheek and many brown dots; stalk one and one-quarter inches long, inserted by fleshy ring at the top of the narrow neck. Flesh fine-grained, buttery,

melting, juicy, quite sweet, aromatic; nearly best. Starred and double-starred in several States. Pennsylvania.



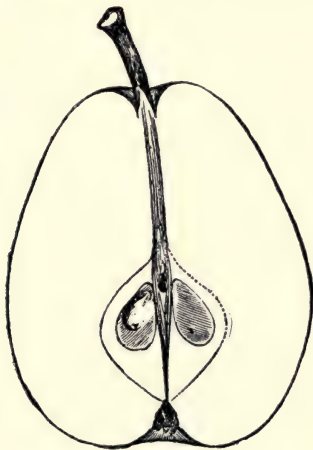
Vicar of Winkfield.

Urbaniste.—Medium to large, obovate pyriform; color pale yellow with russet streaks and quite numerous gray dots; skin very smooth;

stalk one inch long, stout, and inserted in broad well-defined cavity; basin narrow, abrupt, quite deep. Flesh white, with yellowish core, buttery, melting, very juicy, and richly perfumed. Season, autumn. Widely grown east of the lakes and in Colorado and Utah. Belgium.

Vermont Beauty.—Medium to large obovate; color yellow, with bright carmine cheek; stem short, stout, erect, inserted into slight cavity raised on one side. Flesh yellow, melting, rich, very good. Hardier in tree than Flemish Beauty. Vermont.

Vicar of Winkfield.—Large, long pyriform, somewhat one-sided; though slim it is often five to six inches long; color pale yellow, often with brown cheek and quite numerous small brown dots; stalk one to one and one-half inches long, inserted obliquely without cavity at top of narrow neck; basin broad, but very shallow. Flesh greenish white, quite juicy, sometimes buttery, with sprightly flavor, good. Season, late fall. France.



Washington.

Washington.—Size medium, oval or obovate, regular; color lemon yellow, with reddish dots where exposed; stalk one and one-half inches long, inserted in very slight depression. Flesh white, juicy,

melting, sweet, very good. Season, September. Much grown east of the lakes. Delaware.

White Doyenne.—Medium to large, obovate, regular, but variable in length of specimens; color pale yellow, with red cheek and many small dots; stalk three-quarters to one and one-quarter inches long, brown, a little curved, and inserted in small round cavity; basin shallow, smooth, or very finely plaited. Flesh white, fine-grained, buttery, melting, high-flavored; quality best. Season, autumn. Grown across the continent. France.

Wilder (Col. Wilder).—Large, pyriform; color pale yellow, dotted and marbled with russet. Flesh melting, very juicy, tender, very good. Season, winter. Taking front rank among the newer varieties east of lakes and South.

Wilder Early.—Size medium, obovate, color yellow with red cheek. Flesh tender, sweet, vinous, quality very good. One of the newer varieties, coming into quite general cultivation. New York.

Winter Nelis.—Size medium, obovate, and often pyriform; color yellow, with blotches and spots of cinnamon russet; stalk one and one-quarter inches long, inserted in small narrow cavity; basin broad and quite deep. Flesh white, juicy, tender, melting, buttery, richly sweet, very good. Season, quite late. Double-starred in several States. Belgium.

Worden Seckel.—Medium, conic pyriform; golden yellow in color, with crimson cheek; stem one-quarter inch long, not curved. Flesh dull white, juicy, buttery, fine-grained, melting. Season, autumn. New York.

Zuckerbirn.—Size medium, obtuse pyriform; color rich grayish yellow, bronzed on sunny side; stem very long and stout, inserted at top of neck; basin wide, regular. Flesh buttery, melting, sweet, very good; seeds large, black, flattened and pointed; tree very hardy. Russia.

THE QUINCE.

AN outline of the origin, races, propagation, management, and uses of the Quince is given in Chapter XIII, and in Section 137 its pruning is discussed. In the States east and southeast of the great lakes the varieties introduced from Europe at an early date succeeded from the start far more perfectly than most other orchard fruits, and up to the present few additions have been made to the list of varieties. In sections favorable for its growth it was grown as a home fruit for culinary use along a fence-line, or in a neglected corner, and the fruit appeared in market only locally, if at all. But at this time the fruit in its season reaches distant markets in regions where it does not thrive, and it is found in the mining and lumber camps with as much certainty as the apple or orange, as we now have in New York, New Jersey, Ohio, and in other States, well-managed and profitable quince orchards. The small trees come into bearing about as soon as the grape, and the quince orchards known to the writer are more profitable as yet than other pomaceous fruits. The commercial marmalade found in every grocery in west Europe, and on every table nearly, is yet a thing of the future with us, yet every American housewife tries to secure a supply for preserving with sweet apples, and quince jelly is relished by those who can secure it even at fancy prices.

LEADING VARIETIES OF THE QUINCE.

Alaska.—Large, pyriform; color yellow. Said in New York to bear unusually young, and to bear regular crops. As yet not widely tested, but the present record is very favorable.

Angers.—Size medium, pear-shaped; color golden yellow; quality good. The vigorous growth of this variety has given it commercial status as a stock for the pear, yet it is commercial in some districts as a fruit.

Apple-shaped (Orange).—Large, roundish, apple-shaped; color golden yellow, fair, smooth; quality good. In quince-growing districts this old variety is still grown by amateurs and farmers, but not commercially, perhaps for the reason that the claim that it reproduced from seed developed inferior varieties and a mixed nomenclature.

Bentley.—Large, yellow, handsome, and said to be excellent in quality. One of the leading varieties in Maryland and South Carolina.

Bourgeat.—Large, slightly pyriform; color rich golden, with velvety skin, which is very smooth. Has peculiarly healthy foliage. Highly prized in Ohio and the Southeast States.

Champion.—Large, obtuse pyriform; color green, mostly overspread with bright yellow. Flesh tender and unusually good in quality. Though relatively a new variety it is grown commercially across the continent. America.

Columbia.—Very large, somewhat ridged; color greenish yellow, with red blushed cheek. It is said to cook as tender as an apple and to make a jelly of unusual fragrance and quality. Japan.

Fuller.—Large to very large, distinctly pyriform; surface somewhat ridged; color rich yellow. Flesh not as coarse when cooked as other varieties. Highly prized in New Jersey.

Johnson.—Large, roundish oblate, compressed at stem; color greenish yellow, with down in cavity. Flesh yellowish, juicy, cooks tender. A Pennsylvania variety now widely grown.

Meech (Meech's Prolific).—Large to very large, obscure pyriform; color bright yellow; quality very good; peculiarly fragrant. A leading variety in the Eastern and Southeastern States. Connecticut.

Missouri Mammoth.—Very large, roundish oblate; color green, mostly overspread with orange yellow; quality and texture of flesh very good. Rapidly becoming a popular commercial variety, especially in Utah and parts of Colorado.

Pear.—Large to very large, pyriform, with roundish oblong body; color yellow. Flesh firm but with high flavor. Grown for market extensively, especially for distant shipment.

Pineapple.—One of Burbank's seedlings, which is claimed to have a distinct pineapple flavor. It is large, yellow, and much like the orange variety, but is said to cook tender like an apple.

Portugal.—Large to very large; color light orange. The best variety in quality, and the tree is the strongest grower, with larger and

broader leaves. When cooked the sauce is red. Profitable in some places. As a rule not equal to others in bearing.

Rea (*Rea's Mammoth*).—Large to very large, roundish obtuse in form; color yellow, with pinkish shades. A leading commercial variety of the Eastern and Southeastern States and of California. New York.

Van Deman.—Medium to large; color greenish yellow; subacid; quality very good for culinary uses. Grown in Missouri largely.

West (*West's Mammoth*).—Very large, roundish; color clear yellow. Grown in California from seed received from Boston, of the Orange variety. One of the best in flavor and much liked where it has been tested.

ORNAMENTAL QUINCES.

The Scarlet Japan, Blush Japan, Grandiflora, Umbellicata, and still other fine flowering varieties are grown, most of which bear handsome and fragrant fruit. Of the oriental species *Cydonia Maulei* has the most horticultural interest. It is a low shrub, very much hardier than our cultivated garden varieties, with showy reddish flowers, followed by an abundant crop of fruit useful for marmalade. Its survival in climates such as the prairie States suggests its improvement by selection, and possibly by crossing. A hardy bush variety, with edible fruit as large as that of the Champion, would have much value.

THE STONE FRUITS.

THE Cherry, Plum, Prune, Apricot, Peach, and Nectarine are classed together in Chapter XIV of Part I in discussing their history, classification, propagation, and management, and their pruning is discussed in Chapter XI, as they have much in common in culture, care, spraying, and propagation. Grouping these fruits together for description is also a more natural arrangement than the usual alphabetical order in which they are placed in American pomological books.

THE CHERRY.

DUKE AND MORELLO VARIETIES.

Amarelle Bunte.—Fruit large, round; stalk moderately long and stout; cavity shallow; skin yellow, covered with fine red. Flesh



Amarelle Hative.

slightly colored, firm, tender, juicy, subacid; stone large. Very good. Season, second week in June. Tree upright grower, foliage large and coarse. Does well in south Iowa and Missouri.

Amarelle Hative.—Fruit large, obtusely heart-shaped, with slight trace of suture; color nearly black; stalk one and one-half to two inches long in deep cavity. Flesh colored, mildly acid; quality very good. Season, ten days later than Early Richmond. Of Vladimir type of tree and fruit. Russia.

Baldwin.—Large to very large, round; color dark, yet almost transparent; stem quite large, medium in length; fruits usually in pairs. Flesh subacid; quality very good for a Morello variety. Grown in Maryland. Commercial.

Belle Magnifique.—Fruit medium to large, heart-shaped; color pinkish red and yellow; stem one and one-half to two inches long, in rather deep cavity. Flesh firm, white; uncolored juice; quality only fair. Season, last of July. Tree about as hardy as Dyehouse. This appears to be a cross between the Morello and Mazzard classes.

Bessarabian (No. 62).—Medium to large; oblate heart-shaped; color clear red; stem one to one and one-half inches long, slender at upper end, inserted in broad and quite deep cavity. Flesh meaty, slightly colored, mildly acid; quality very good. Tree very hardy far North when on its own or other hardy roots. Bears most regularly on thin rather poor soils, where it makes less growth of tree. Russia.

Brusseler Braune.—Fruit large, nearly round, heart-shaped, conical; color dark red, and nearly black when fully ripe; stem one and one-half to two inches long, in rather broad deep cavity; suture slightly depressed, with slight line in centre. Flesh firm, meaty, colored, subacid, and best in quality of the Morello class. A round-topped tree, bearing regular and full crops. Russia.

Bunte Morello.—Fruit of largest size, somewhat pear-shaped; color bright red; stalk one and one-half inches long, slender, inserted in deep abrupt cavity; suture well defined. Flesh light-colored, meaty, juicy, subacid, and best in quality. From North Silesia, Germany. It seems to be a cross between the Dukes and Morellos. About as hardy as the Dyehouse.



Belle Magnifique.

Carnation.—Large to very large for its class, roundish; color yellowish white, with marbling of orange red, becoming bright red when fully ripe; stem one and one-quarter inches long, stout, and inserted in a shallow cavity. Flesh yellowish white, tender, juicy, pleasantly flavored, and separates freely from the pit. Season, last of July. Its fault in most sections is shy bearing. Duke.

Cerise de Ostheim.—Size medium to large, roundish oblate, without suture; color purple red, and when ripe nearly black; stem one to one and one-half inches long, in narrow shallow cavity. Flesh dark red, meaty, quality very good to best, with pure subacid flavor. Russia.

Corning.—Large, oblate conical; color dark red; stem long, slender, inserted in narrow shallow cavity. Flesh meaty; juice colored; quality very good. Season, somewhat later than Double Natte, and a fine bearer. Originated by A. F. Collman, Corning, Iowa. Morello.

Donna Maria.—Medium to large roundish, dark red. Flesh tender, juicy, rich, mildy acid. Succeeds well in some localities south of the forty-second parallel. Ohio.

Double Glass.—Medium to large, oblate; color dark red; stem three-quarters to one inch long, in broad shallow cavity. Flesh meaty, uncolored, subacid, good. Season, about June 20th. Russia.

Double Natte.—Size large, heart-shaped, conical, with depression on one side; color deep crimson; skin thin, tender, and melting; stem one to one and one-half inches long, inserted in broad and shallow cavity. Flesh and juice colored, mildly acid, melting, and best in quality for a Morello. Tree remarkably hardy at the North. Russia.

Duchesse de Angoulême.—Medium to large, oblate heart-shaped; color mottled light red; stem one to one and one-half inches long in shallow broad cavity; suture clearly defined. Flesh quite firm, uncolored, good. Tree large, spreading, with large coarsely serrated leaves. A heavy annual bearer in central Iowa. North Silesia.

Dyehouse.—Size medium, oblate, flattened at top; apex depressed; color light red; stem one and one-quarter inches long, stout, in narrow abrupt cavity. Flesh uncolored, quite firm, acid; quality only fair. Tree less hardy than Early Richmond.

Early May (of the West).—Medium in size, markedly flattened; color clear red; stem seven-eighths to one inch long, in broad shallow cavity; apex depressed. Flesh firm, juicy, good. This is often

grown as Early Richmond. The Early May of the East is different and less desirable.

Early Morello (*No. 23 Orel*).—Fruit medium in size, round, flattened at ends; color bright red; stem three-quarters to one inch long, quite stout, set in quite broad and deep cavity; apex slightly compressed. Flesh light-colored, very juicy, with brisk acid flavor. Season about the same as Richmond. A very hardy tree, and a regular and heavy bearer. Russia.

Early Morello (*of Kansas*).—Imported from Germany under this name, but not identical with Early Morello from Russia. Fruit medium to large, black when fully ripe, tender, vinous. Season of Early Richmond. Grown in Kansas.

Early Richmond.—Medium, round, slightly flattened; suture well defined; color light red; stem one inch long in broad sloping cavity; apex depressed. Flesh soft, uncolored; quality very good.



Early Richmond.



English Morello. After Woolverton.

Fruit usually in pairs. Grown over a large part of the Union. Early May and Early Morello are often sold under this name.

Empress Eugenia.—Large, roundish obtuse, nearly heart-shaped; color rich dark red; stem quite short, in deep cavity. Flesh slightly

colored, tender, rich, subacid; stone small; very good. Season, first half of June at West. Doubled-starred in New York, Michigan, Utah, and Colorado. Duke.

English Morello.—Medium to large, roundish oblate; color dark red, nearly black when ripe; stem one and one-half inches long, in medium shallow cavity; apex not indented. Flesh purplish red, meaty, juicy, slightly astringent, good. As with the Vladimir this old variety has run into variations in Europe.

Esperen.—Large, roundish oblate, compressed; stalk one inch long, stout, in broad deep cavity; color dark scarlet. Flesh tender, juicy, quite acid. Season, last of June. Grown around the lakes.

Eugenie.—Large, oblate, heart-shaped, compressed; stalk one and one-half inches long, stout; color light scarlet or amber. Flesh mild acid, very juicy, soft, tender, good. Grown around the lakes and South. Red Duke.

Everbearing.—Large, roundish oblate, somewhat compressed; stalk one and one-half inches long, in broad shallow cavity; color dull red, and dark red when fully ripe. Flesh quite tender and juicy, mild acid, quality good. Profitable around the lakes, especially in Michigan. Duke.

Flagg.—Medium in size, roundish. Flesh firm, rich, mildly acid; quality very good for this Morello type. Tree short-jointed and very hardy. Ripens in advance of Early Richmond.

Fouché's Morello.—Fruit large, obtusely heart-shaped, bright red in color, semi-transparent; stem two to two and one-half inches long, slender. Flesh quite firm, juicy, and of excellent quality for all uses. Ripe fifteen days later than Richmond. Tree a low compact grower and a heavy bearer. Russia.

Frauendorfer Weichsel.—Size medium, heart-shaped, conical; stem long but variable, quite stout; color dark crimson. Flesh tender, with peculiar vinous flavor. Best for culinary uses. Season, middle of July. Tree remarkably hardy. Russia.

Galopin.—Large, roundish oblate; color light red; stem stout, one and one-half inches long in medium cavity. Flesh tender, subacid, pleasant, very good. Apparently a cross between the Duke and Morello families. As hardy in tree as Early Richmond. France.

George Glass.—Medium to large, round, heart-shaped, somewhat flattened at ends; color dark red; stem one and one-half to two and



Griotte Imperial.

(To face page 277.)

one-quarter inches long, slender, in abrupt deep cavity. Flesh somewhat colored, meaty, juicy, mildly acid, very good. North Silesia.

Griotte du Nord.—Medium to large, nearly round; color dark red; stalk two to three inches long, slender. Flesh highly colored, juicy, rather acid, but pleasantly flavored. A hardy upright tree. Russia.

Griotte Imperial.—Medium to large, oval, dark red; stem short, stout, in shallow cavity. Flesh meaty, firm, colored, quite acid, yet with a rich mingling of sweet and sour. Tree a slow, round-topped grower and very productive. Season of Late Richmond; very hardy far North. Russia.

Griotte Kleparite.—Large, heart-shaped, conical, suture depressed; color pale red, often with white cheek; stem one and one-quarter to two inches long, stout, in deep and broad cavity. Flesh firm, whitish, juice uncolored, quality very good. A Red Duke variety, about as hardy as Early Richmond. Russia.

Griotte Précoce.—Fruit large, flattened; suture distinct; color bright shining red; stem one and one-quarter to one and three-quarters inches long, curved, stout, in deep cavity. Flesh soft, breaking, uncolored, very good. Season, middle of June. Tree very hardy and fruitful. Russia.

Hortense.—Large to very large, roundish, elongated, with sides slightly compressed; color shining red, mottled with darker red; stalk slender, about two inches long. Flesh creamy yellow, netted, very tender, subacid, very good. Of Red Duke type.

Ida.—Medium to large, obtuse conical, slightly compressed; suture slight; color pale yellow, nearly covered with bright red; stem slender, inserted in quite large deep cavity. Flesh very tender, juicy, rich, very good; pit very small.* Season of May Duke. Pennsylvania. Duke.

June Morello.—Large, oblate, scarlet red in color; stalk from one to one and one-half inches long, quite stout, inserted in a broad cavity. Flesh meaty, juicy, uncolored, subacid, and very good for its class. Season of Early Richmond. Tree hardy and fruitful. Russia.

Kings Morello.—Large, oblate, obtusely heart-shaped; color dark red; stem variable, from one to one and one-half inches long, in broad shallow cavity. Flesh firm, juicy, sprightly, uncolored, good. Season, middle to last of June. Tree very hardy and fruitful. Russia.

Koslov (*Koslov Morello*).—Large, round, pointed at apex; color dark red, turning black at maturity; stalk one and one-half inches



Hortense.

long, in slight cavity; suture a mere trace. Flesh red, and dark red when fully mature, tender, juicy, acid, but milder when fully ripe; of the Vladimir type. Russia.*

Late Duke.—Large, obtuse heart-shaped; color dark handsome red when fully ripe; stalk one to one and one-half inches long, in shallow cavity. Flesh lightly colored, subacid, but not rich in flavor. Season, very late. Starred in a dozen States. Duke.

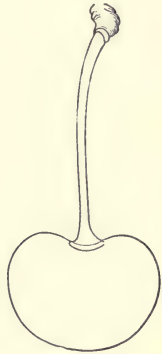
Lancaster.—Medium, roundish, heart-shaped, regular; suture very slight; color bright red; stalk long, slender, in medium smooth cavity. Flesh half tender, juicy, sweet, with a sprightly pleasant flavor. Ripens in June in Pennsylvania, where it originated.

Late Kentish.—Size medium to small, round, somewhat flattened; color darker red than Early Richmond, when fully ripe; stem one to

one and one-half inches long, in small cavity. Flesh tender, juicy, with a pleasant pure acid. This has been widely scattered, and is known



Koslov.



Late Duke.

as Pie Cherry and Late Richmond in many sections. It is double-starred in several States.

Lieb.—A sprout brought from Germany and planted in Galena, Ill., by Mr. Lieb. Fruit about size of Early Richmond, somewhat later, and much less acid. Grown in Southern Illinois and Indiana.

Lipp.—Under the name of Lipp's Late Blood this variety is grown in Western New York; color dark red or crimson. Flesh solid, with very dark-colored flesh and juice.

Lithauer Weichsel.—Size small, form roundish oblate; stem long, slender, in narrow shallow cavity; color dark red. Flesh purple, meaty, pleasantly acid. Much used in East Europe for cherry wine, as it is well stored with grape sugar. Excellent for canning. Russia.

Louis Philippe.—Large, roundish, regular; color dark red, and nearly black when mature; stem short, stout, in broad regular cavity. Flesh red, tender, sprightly, subacid, very good. Season, last half of July. France.

Lutovka.—Fruit large, flattened, bright red in color; stem three-quarters to one and one-half inches long, in broad rather shallow cavity; apex depressed. Flesh uncolored, juicy, sprightly, mildly acid; quality very good. Tree upright, with large leaves much like those of the Dukes. Season, June 25. Russia.

May Duke.—Large, roundish obtuse, heart-shaped; color nearly black when ripe; stalk one to one and one-quarter inches long, in



Louis Philippe.



May Duke.

light depression. Flesh lightly colored, tender, melting, and satisfying in flavor. Season, quite early. Popular in several States.

Minnesota.—Medium, roundish, heart-shaped, slightly compressed; stalk one and one-half to one and three-quarters inches long, set in medium cavity; color very dark crimson, almost black. Flesh tender, subacid, rich; flesh and juice dark crimson; quality very good. Sent to the writer by a Swede, who brought sprouts from his natal home.

Minnesota Ostheim.—Medium to large; form oblate conical, with depression on one side; apex slightly depressed; stem one and one-quarter inches long, in quite wide and shallow cavity. Flesh meaty, juicy, subacid, dark red, quality very good. Season, middle of July. Tree hardy and fruitful.

Montmorency (*Large Montmorency, Monarch*).—Large, roundish

oblate; color reddish amber; stem one to one and one-quarter inches long, inserted in broad and deep cavity. Flesh tender, mildly acid, uncolored; quality good. Tree with round spreading head. Fruit ripens about June 20th.

Montmorency Ordinaire. — Large, roundish; color crimson; stem one to one and one-half inches long, set in medium cavity. Flesh tender, vinous, sprightly, pleasant. Tree rounded in top, with upright habit. The Montmorency group has been mixed in cultivation and propagation. After four years' study on his own trial grounds T. T. Lyon, of Michigan, gave the above descriptions, which agree with the writer's study of the two varieties mainly cultivated during the past twenty years.

Montrueil. — Large, roundish, heart-shaped; color amber, with lively red on sunny side, somewhat mottled; stem one and one-half inches long, quite stout, in medium cavity. Flesh and juice light colored; quality very good. A new variety of Duke, giving much promise in Michigan.

Morello Hative. — Fruit medium, round, somewhat flattened; stalk one and three-eighths inches, moderately long; cavity shallow; skin very dark red. Flesh red, tender, juicy, acid; juice highly colored; stone medium; quality good. Season, last week in June. Tree a low grower and very hardy. Russia.

Northwest. — Size medium, roundish conical, laterally depressed; color red, and when fully ripe very bright red; stem quite long, inserted in shallow cavity. Flesh quite firm, subacid, very good; pit very small. Illinois.

Olivet. — Large, globular, heart-shaped; color deep red or crimson, glossy; stem one and three-eighths inches long, quite stout, and inserted in a broad deep cavity. Flesh tender, rich, vinous, subacid, red, with rose-colored juice; quality good. One of the hardiest of the Red Duke family.

Orel (*Orel No. 27*). — Medium to large, round, slightly flattened; color light red; stem three-quarters to one inch long, in shallow cavity; suture distinct. Flesh uncolored, meaty, juicy, mildly acid; quality very good. Season that of Lutovka. Russia.

Ostheim. — Fruit large, roundish, oblate, one side compressed; color dark red, and much darker when fully ripe; stalk slim and variable in length. Flesh liver-colored, tender, juicy, subacid, and very good. Season, middle of July. As introduced many years ago

it is starred and double-starred in many States. The Minnesota and Cerise de Ostheim were introduced later. Morello.

Plumstone Morello.—Large, roundish, heart-shaped; color dark red; stalk one to one and three-quarters inches long, set in medium-sized cavity. Flesh colored, tender, juicy, and mildly acid when mature. Season, last of July. Grown in small way in several States.

Reine Hortense.—Very large, roundish, slightly elongated; suture a distinct line on even surface; color bright red, with marbling and mottling of other shades. Flesh tender, juicy, nearly sweet; flavor best. Season, medium to late. Grown largely in New York, Michigan, Utah, and Colorado. Duke.



Reine Hortense.

Royal Duke (*Royal Tardive*).—Very large, roundish oblate; color dark red. Flesh colored, tender, juicy, rich; quality very good. Does well in the dry parts of Texas and New Mexico. Duke.

Rupp.—Large, roundish, but somewhat elongated; color light yellow, mottled and marbled with red; stem long, quite stout, and set in a broad, deep, quite irregular cavity. Flesh light-colored, quite firm; quality very good. Duke.

Sappington.—Originated in St. Louis. Said to be earlier than Early Richmond, a good bearer and vigorous grower. Becoming commercial. We have not seen the variety, though much grown near St. Louis.

Shadow Morello.—Large, heart-shaped, conical; color nearly black when ripe; stem two inches long, quite stout, in narrow quite deep cavity. Flesh meaty, juicy, colored, mildly acid. Tree small, round-topped, and an annual bearer. Russia.

Sklanka.—Large, oblate, flattened laterally; color light red, usually with white or yellow on shaded side; stem one to one and one-half inches long, slender, in narrow shallow cavity. Flesh quite firm, juicy, subacid, and with uncolored juice, very good. When fully ripe nearly sweet. Season, middle of June. Russia.

Spate Morello.—Large, heart-shaped, nearly round; color almost black when ripe; stem one and one-half to two inches long in deep



Shadow Morello.

(To face page 282.)



Sklanka.

(To face page 283.)

cavity. Flesh highly colored, firm, meaty, and mildly acid when fully ripe. A handsome round-topped tree, bearing heavy annual crops; very hardy. Russia.

Strauss Weichsel.—Large, roundish, heart-shaped, flattened at both ends; stem short, in shallow cavity. Flesh colored, meaty, and slightly astringent until fully ripe; quality very good. A round-topped tree, with medium-sized firm leaves; very hardy North. Russia.

Suda Hardy.—Size medium, roundish conical, depressed laterally; color light red; stem one to one and one-quarter inches long, in broad deep cavity. Flesh firm, colored, juicy, and when fully ripe good in quality. Season, first half of July.

Susse Fruh Weichsel.—Small to medium, roundish oblate; color dark red; stem one to one and one-quarter inches long, quite stout, inserted in small cavity. Flesh firm, somewhat colored, juicy, mildly acid. Season, 29th of June. Specially valuable for canning. Russia.

Timme.—Large, roundish, heart-shaped; color red; stem one to one and one-eighth inches long, in broad shallow cavity. Flesh melting, rich, with uncolored juice; quality very good. Season, last of June. Imported from Germany by a Mr. Timme, of Omaha, Neb.

Toronto.—Large, subacid, nearly black. Season last of June in Southern Illinois. A Canadian variety propagated in Illinois.

Terry.—Medium, roundish, flattened laterally; color dark red; stem one to one and one-quarter inches long, quite stout, and inserted in shallow cavity. Flesh meaty, subacid, colored; quality very good. Of Vladimir type. This was introduced from Russia by the writer. Specimen trees sent for trial to Mr. Terry, of Crescent, Iowa, proving valuable, and the name or number being lost, it has become commercial under the above name. Russia.

Vladimir.—Small to medium, roundish, and borne in clusters of from two to four on outer limbs; roundish in form; color black when fully ripe; stem slender, in small cavity. Flesh firm, juicy, nearly sweet, juice colored; quality very good for dessert or canning. Season, earlier than Early Richmond. The variety described is the one sent out by the Iowa Agricultural College. As grown in Russia it is somewhat variable. Russia.

Weir.—Large, heart-shaped, conical; suture a dark line with apex depressed; color dark red; stem about two inches long, stout,

in cavity broad and deep. Flesh meaty, quite firm, with lightly colored juice; quite acid until fully ripe. This was first sent out as Weir No. 12. It is hardier than Early Richmond and a regular bearer.

Wragg.—Large, roundish, heart-shaped; color dark crimson, and when fully ripe black or nearly so; stem one and one-half inches long, medium size, inserted in small shallow cavity. Flesh and juice light crimson, firm, juicy, good, but slightly astringent; much like English Morello, but much hardier in tree and a stronger grower.

BIGARREAU AND HEART VARIETIES.

On account of the natural and artificial crossing of the various classes of cherries, as noted in Section 179 of Part 1, it is difficult to decide in some cases whether a given variety, such as the Abbess, should be classed with the Red Dukes or the Heart class. In such cases the character of the fruit rather than the tree has been considered.

Abbess.—Fruit medium to large, heart-shaped; color dark red; stem two to two and one-half inches long, stout at lower end and thinner above; cavity shallow; suture well defined. Flesh meaty, with colored juice; quality good, mildly acid, with a pleasant flavor. A cross with Red Duke. North Silesia.

Abbess de Oignies.—Size medium to small; form oblate; color bright red; stem one to one and one-quarter inches long, in broad shallow cavity; apex flattened. Flesh firm, uncolored, juicy, and when fully ripe nearly sweet. Season of Late Richmond. Fruits often borne in terminal clusters of three or four. The leaves are mottled and variegated, making the tree quite ornamental. A cross with Red Duke. Russia.

American Heart.—Medium to large, four-sided, heart-shaped; color pink and amber; stem long, slender, in small shallow cavity. Flesh quite tender, juicy, sweet, good. A popular home variety where hardy. Heart.

Archduke.—Large, obtuse, heart-shaped; color dark red when mature; stalk one and one-half inches long, in rather wide and deep cavity. Flesh colored, melting, rich, subacid, quality very good. Ripe in early July. Starred in New York, Kansas, Nebraska, and other States. A cross with the Red Duke.

Baltaver.—Medium, heart-shaped, surface glossy; color light and dark crimson on yellow ground, with numerous golden dots; stem one

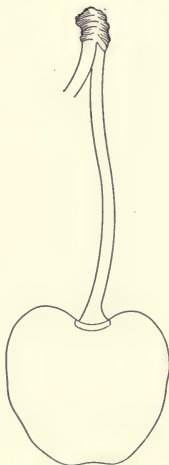
and one-eighth to one and five-eighths inches long, in irregular flaring cavity; suture distinct. Flesh yellowish, meaty, quite juicy, good to very good. Seems to be hardier in tree than most Heart varieties. Hungary.

Belle de Choisy.—Medium, round, unusually regular; color pale amber where shaded, with mottling of yellowish red in the sun; skin peculiar in showing a net-like texture of flesh below; stalk slender, of medium length, in wide shallow depression. Flesh amber-colored, tender, melting, and when fully ripe quite sweet. Season middle of June. Red Duke cross.

Black Eagle.—Medium to large, borne in pairs, and often three in a cluster; form obtuse, heart-shaped; color dark purple, and when ripe nearly black; stalk three-quarters to one inch long, slender, in shallow cavity. Flesh tender, rich, juicy, and best in quality; flavor vinous and sweet, as grown in the interior. Ripe early in July. Heart.



Black Eagle.



Black Tartarian.

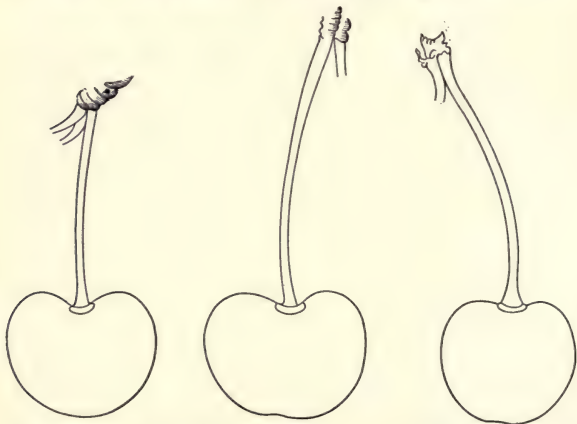
Black Heart.—Fruit medium to large, heart-shaped, slightly irregular; color dark purple and black when fully ripe; stalk one and

one-half inches long, in medium cavity. Flesh tender, juicy, with exquisite sweet flavor. Season middle to last of June. One of the oldest and most popular of the Heart cherries.

Black Tartarian.—Very large, obtusely heart-shaped, with surface often uneven; color black when ripe; stalk one to one and one-half inches long, in shallow cavity. Flesh colored, half tender, rich, nearly sweet, quality best when grown inland. Season, from first to middle of June. Popular as a home fruit wherever it can be grown. Heart.

Centennial.—Large to very large; oblate; color yellow, with marbling of crimson; stalk one to one and one-half inches long, erect, in wide shallow cavity. Flesh quite firm, fine-textured, juicy, and very sweet. Said to be a seedling of Napoleon. Heart.

Cleveland.—Large, roundish, heart-shaped; color delicate red on yellow ground; stem one and one-half inches long, curved, in broad and deep cavity; suture distinct in marked depression. Flesh firm, juicy, sweet, richly flavored. Season, early. Bigarreau.



Coe Transparent.

Downton.

Downer Late.

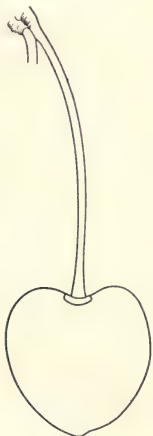
Coe Transparent.—Medium in size, round, or nearly so, regular; color pale amber, changing to light red in the sun, with pale patches interspersed; stalk one to one and one-half inches long, in quite deep

cavity. Flesh tender, melting, juicy; flavor sweet, refreshing, and pleasant, best in quality. Season, last half of June. Connecticut. Heart.

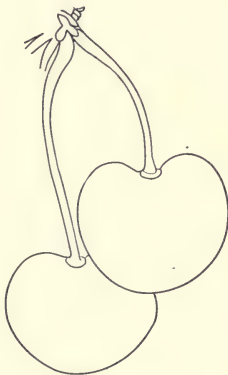
Dikeman.—Large, heart-shaped, oval; color black; stem quite stout, in wide and rather deep cavity. Flesh firm, rich, sweet, good. Grown in Ohio and New York. A remarkable keeper after ripening. Bigarreau.

Downton.—Large, roundish, heart-shaped; apex indented; color creamy yellow, with red stains; stem long, slender, in wide sunken cavity. Flesh yellowish, tender, delicious. England. Heart.

Downer Late.—Fruit medium in size, rounded, or oval, heart-shaped; color lively red, with very smooth skin; stalk one to one and one-half inches long, in shallow cavity; fruit in clusters of two to three. Flesh tender, melting, high-flavored; flavor sweet and refreshing. Its high quality is reached only when it fully ripens on the tree. Heart.



Elton.



Gov. Wood.

Early Purple.—Medium to small, oval, heart-shaped; color dark red, and purple when ripe; stem two to two and one-half inches long, in broad shallow cavity. Flesh red, tender, juicy, rich, sweet, very

good to best. Season, about first of June. Grown east of lakes and in Utah. Heart.

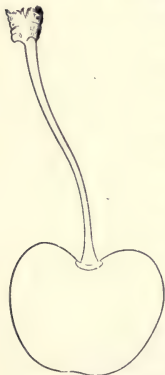
Elkhorn.—Large, heart-shaped, with slightly uneven surface; color black; stalk one to one and one-half inches long, in quite deep cavity. Flesh firm, not very juicy, with a rich flavor. Season, late. Profitable for distant shipping. Heart.

Elton.—Large, heart-shaped, pointed at apex; color pale yellow, with blotches and shadings of red; stalk two inches long, slender, in broad very shallow cavity. Flesh half tender, juicy, rich, and high in quality. Season, last half of June. Grown in mild climates. Heart.

Gov. Wood.—Large, heart-shaped; color yellow, with shading and marbling of red; suture well defined; stem one and one-half inches long, in broad very shallow cavity. Flesh tender, sweet, rich, and nearly best in quality. Ripe in interior from first to middle of June. Ohio. Heart.

Hoskins.—Very large, round, heart-shaped; color dull purple. Flesh dark, mottled, sweet, high-flavored. Double-starred in Oregon for home use and shipping. About as hardy as Napoleon, of which it is a seedling. Oregon. Bigarreau.

Kirtland's Mary.—Large, round, heart-shaped, with flattened base; color varied shades of red on yellow ground; stem one to one and one-half inches long. Flesh yellow, firm, rich, highly flavored, sweet. Season, about July 1st. One of the best of Prof. Kirtland's Ohio seedlings. Bigarreau.



Knight (Early).

Knight (Early).—Fruit large, heart-shaped, somewhat irregular; color dark purple and black when fully ripe; stalk one and one-quarter to one and one-half inches in length, in a deep cavity. Flesh dark red or purple, tender, sweet, and richly flavored. Season, about that of Black Tartarian; succeeds best on a rich, loamy soil, in a warm position. Heart.

Lewelling.—Very large, roundish, heart-shaped; color black. Flesh firm, solid. Desirable for long-distance shipping. Commercially grown on west coast, and to some extent east of the lakes. Oregon. Heart.

Mercer.—Large, heart-shaped; color dark red; stem long, rather

slender, inserted in wide shallow cavity; fruit usually in clusters of three. Flesh sweet, rich, juicy, very good. New Jersey. Heart.

Mezel.—Very large, obtuse, heart-shaped; color black; stalk long, slender. Flesh firm, rich, very good to best. Starred in Eastern States and double-starred on west coast as a heavy bearer of choice dessert fruit. Season, July. Heart.

Murdoch.—Large to very large, from three-quarters to one and one-quarter inches in diameter, roundish, heart-shaped; color yellowish, overspread with crimson, becoming almost black when fully ripe. Flesh juicy, sweet, firm, very good. Productive. Grown in Ohio. Bigarreau.

Napoleon.—Very large, heart-shaped, slightly oblong; color pale yellow, dotted and spotted with red and marbled crimson on sunny side; stem short, stout, and set in narrow cavity. Flesh very firm, juicy, good.

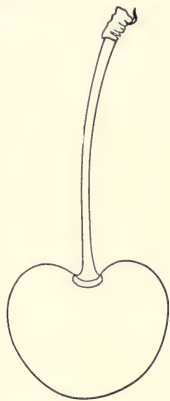
Ohio Beauty.—Large, roundish, heart-shaped; stalk one and one-half inches long, quite slender, in medium cavity; color yellowish white, mostly covered with varied shades of red. Flesh tender, juicy, sweet, very good. Grown in Ohio and east of the lakes. Heart.

Oxheart.—Large, obtuse, heart-shaped; color dark red. Flesh red, tender, pleasant, but not high in flavor. Commercially grown for shipping in Oregon and North California. Heart.

Plymouth Rock.—Medium, heart-shaped; amber-colored, with red areas; stem slender, inserted in narrow shallow cavity. Flesh rich, juicy, tender; pit small. Will hang on the tree long after it is ripe. Grown and prized in Ohio. Heart.

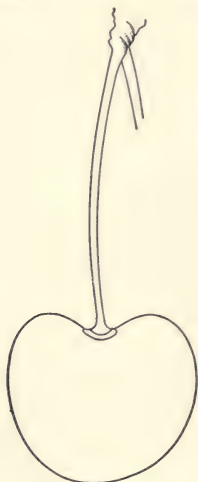
Red Jacket.—Large, obtuse, heart-shaped; color light red; stalk two inches long, slender. Flesh half tender, juicy, good, but not high in flavor. Grown South. Heart.

Rockport.—Large, roundish, heart-shaped; color red, shaded with pale amber; stalk one and one-half to two inches long, largest at upper end, in wide shallow cavity. Flesh firm, juicy, sweet, rich flavored. Largely grown in New York, Ohio, and Michigan.

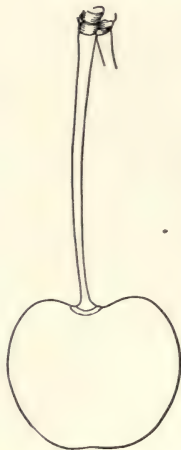


Ohio Beauty.

Schmidt (Smith).—Very large, obtuse, heart-shaped, compressed slightly; color dull red, mottled and marbled with carmine. Flesh vinous, sweet, with firm, meaty texture; good. A promising new variety for shipping, doing well in Michigan and the Southeast. Heart.



Red Jacket.



Rockport.

Sparhawks Honey.—Medium in size, roundish, heart-shaped, regular; color pale amber red, becoming bright red when fully ripe; stem one and one-half inches long, quite slender, in a round, even, shallow cavity. Flesh juicy, sweet, rich. Season, last of June. A home variety in the Southeastern States.

Sweet Montmorency.—Medium in size, round, somewhat flattened at base, and with depressed point at apex; color pale amber, mottled with light red; stalk one and three-quarter inches long, slender, inserted in small even cavity. Flesh yellowish, tender, sweet, very good. A heart variety, evidently crossed with the Morello. Grown in Massachusetts.

Vilna Sweet.—Large, heart-shaped; color light red; stem long,

quite slender, inserted in narrow cavity. Flesh tender, juicy, sweet, with uncolored juice; quality best. Season, middle of June. One of the hardiest of the Heart varieties. Russia.

White Caroon.—A sweet variety, grown in Western New York to some extent; color light; quality very good. Not commercial; grown for home table use. Heart.

Windsor.—Large, fifteen-sixteenths inch long by one inch wide; round, obtuse, heart-shaped; color dark red; stem one and one-half inches long, inserted in quite deep cavity; usually fruits are in pairs or triplets. Flesh yellowish, with reddish tint, firm, quite juicy, rich, and sweet; quality very good. Commercial where the Bigarreau varieties succeed.

Yellow Glass.—Large, round, flattened at ends; suture indistinct; color bright yellow; stem one and three-quarter inches long, stout, in wide quite deep cavity. Flesh firm, meaty, sweet, juice not colored; quality very good. Tree much harder than Yellow Spanish, which it resembles.

Yellow Spanish.—Large, obtuse, heart-shaped, with base flattened; color light yellow, with blush on sunny side and carmine dots; stalk one and one-half to two inches long, stout, and usually curved. Flesh light yellow, firm, sweet, with rich flavor when fully ripe. Season, last of June. Extensively grown for market in mild climates.

THE PLUM.

The evolution in varieties and species of plums grown in the United States and Canada during the past thirty years is quite as remarkable as the development of the strawberry and grape during that period. The second edition of Charles Downing's great work on American fruits, including his third appendix, describes about three hundred varieties of the plum, all of the *Domestica* class except the Wild Goose, Miner, and Newman. No mention is made of the Japan varieties, and the American species are only referred to in the foot-note: "There are three species of wild plum indigenous to this country, of tolerable flavor but seldom cultivated in our gardens." Bulletin No. 8 of the Division of Pomology of the Department of Agriculture indicates some of the changes of a few years. This Bulletin, published in 1899, includes and describes twenty-two varieties of *Prunus Americana*, eight of *Prunus angustifolia*, eighteen of *Prunus hortulana*, two of

Prunus cerasifera, seventeen of *Prunus triflora*, seven of *Prunus pumila*, and over sixty of *Prunus domestica*, and this includes a number of varieties developed by Burbank and others by crossing with native varieties, and it also includes the leading varieties of plums and prunes grown in California and Oregon.

Prof. F. A. Waugh, in his valuable book on "Plums and Plum Culture," divides the native varieties into several groups or sub-species. *Prunus chicasa* of Asa Gray is separated into the Miner-like group, the Wayland-like group, the Wildgoose group, and the Chicasaw group, and the northern species, *Prunus Americana*, is divided into two groups—the *Americana* and *Nigra*.

This minute division cannot be made accurate, and is confusing to amateur growers and those not familiar with botanical descriptions.

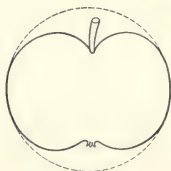
At this time it will be best for the purposes of this publication to follow the classification given by Prof. Bailey as follows : (1) *Prunus domestica*, which includes the garden plums and prunes of European origin and their hybrids; (2) *Prunus triflora*, which includes the newly introduced varieties from Japan, their seedlings and hybrids; (3) *Prunus Americana*, including the native varieties of the North; (4) *Prunus angustifolia*, including the Southern types of *chicasa*; (5) *Prunus hortulana*, including the Wildgoose group and the Miner-like varieties, extending farthest north; (6) the hybrid varieties and those not easy to classify.

As far as possible varieties no longer cultivated are omitted, and where possible the relative hardness of varieties will be indicated.

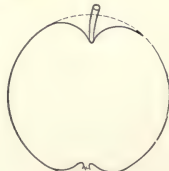
For facts pertaining to propagation, cultivation, pruning, and management, see index of Part I.

The figures outlining the general forms of plums are copied from Downing, and will prove some aid to beginners in understanding the descriptions.

FORMS OF PLUMS.



Oblate.



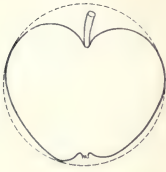
Roundish.



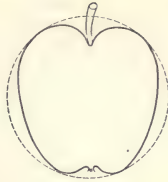
Ames.

"Produced under direction of Prof. Budd by using Japanese pollen on Americana."
Photo and note by Prof. Craig, Iowa Exp. Sta. Bul. 46, Mch. 1900.

(To face page 293.)



Conical.



Oblong.

THE AMERICAN VARIETIES AND THEIR HYBRIDS.

Aitkin.—Large, oval, compressed; color dark red, but paler on shady side, without dots; suture obscure. Flesh yellow, rich, quite firm; quality very good. Season, early. Minnesota. Americana.

American Eagle.—Large, oblong oval, somewhat compressed; color dark red over yellow ground, with numerous yellow dots; stem one inch long; suture indistinct. Flesh reddish yellow, firm; quality very good. Season, September. Originated in Missouri. Americana.

Ames.—Large, roundish, conical; color bright red, with numerous large dots and pale lilac bloom; stalk one-half to five-eighths of an inch long, in broad shallow cavity; suture quite distinct. Flesh light yellow, firm, sugary, rich; quality good to best. Tree very hardy. Hybrid of Americana and triflora.

Apple.—Large, roundish oblate; color reddish purple; stem short, stout, inserted in medium deep cavity; suture obscure. Flesh firm, flavor rather acid; quality fair to good. One of Burbank's hybrids, now grown in New York and South. Japan and Angustifolia.

Arkansas (*Arkansas Lombard*).—Medium, roundish oval; color bright red, with small dots and white bloom; stem long, slender, inserted in very shallow cavity. Flesh soft; quality good. Season, two weeks later than Wildgoose. Grown in Pennsylvania and South Arkansas. Angustifolia.



Aitkin.

Best of All.—Medium to large, round; color rich red. Flesh firm, meaty, and best in quality. Said by F. V. Munson, the originator, to be a seedling of Miner crossed with pollen of Abundance. Texas.

Black Hawk.—Very large for the class, oval; color deep red in the sun, and paler on shaded side; suture distinct, and on the suture side the surface is slightly more convex, giving an irregular appearance in form. Flesh yellow, tender, excellent in quality; freestone. Americana. Iowa.

Brittlewood.—Large, roundish oval; color dark red, with mottling of varied shades; bloom grayish and quite heavy, with numerous small dots; stem short, inserted in shallow cavity. Flesh firm, meaty, good; cling. One of the largest of the Americana varieties. Nebraska.

Brunswick.—Medium, roundish oval; color dark red on yellowish ground, which is exposed at pointed apex. Flesh yellow, meaty, sweet. A month later than Wildgoose. Angustifolia.

Cheney.—Large, roundish oblong, often oblique and with unequal sides; color dull mottled red on greenish yellow ground; bloom blue; stem slender, usually curved, and inserted in small shallow cavity. Flesh yellow, quite firm; quality very good. Season, middle of August; clingstone. Quite subject on drift soil of the West to plum pocket, but valuable in many sections. Americana. Wisconsin.



Cheney.

Clark.—Medium, roundish, irregular; color bright red, with numerous dots and bluish bloom; stem short, in broad medium deep cavity. Flesh yellow; quality good; used as a pollen-bearer for other Chicasa varieties. Angustifolia.

Clifford.—Large, pyriform; color red; bloom conspicuous. Flesh yellow, quite meaty, with pineapple flavor. Season, a week earlier than Wildgoose. A Texas variety not much tested as yet farther north. Hortulana.

Comfort.—Very large, roundish, truncated, enlarged somewhat toward the apex; color dark red, with considerable bloom; skin thick. Flesh quite acid; quality fair. Season, September. Americana. Iowa.

Compass.—A hybrid, originated under cultivation by H. Knudson, of Minnesota, from seed of Sand Cherry (*Prunus Besseyi*) pollinated

with Miner plum. Fruit about one inch in diameter, nearly round, bright cherry red in color, and good in quality for culinary use. When loaded with its highly colored fruit the small trees are ornamental. Hardy far north.

Cottrell.—Large, roundish oblong; color mottled red and yellow, with thin rosy bloom; stem one inch long, inserted at one side of the perpendicular. Flesh firm for a native, rich; quality best. Season, first half of September. Americana. Minnesota.

Curry.—Large, oval, flattened laterally; cavity deep; color purplish red; dots gray and small; bloom lilac-colored. Flesh yellow, firm; quality very good. Season, first half of August. Valuable south of forty-second parallel. Hortulana. Iowa.



Cottrell.



De Soto.

Davenport.—Medium to large, oval, often conical, and flattened laterally; color yellow, with pink blush on sunny side. Flesh yellow, firm; skin thin, not astringent; stone small; quality best, with a sugary flavor, reminding one of the German Mirabelle; pit free. From seed of the De Soto, planted by N. K. Fluke, of Davenport, Iowa. Americana.

De Soto.—Large, oval, slightly compressed; color orange, overlaid with crimson; dots numerous, with thin blue bloom; stalk short, slightly curved, in shallow cavity. Flesh quite firm, juicy, high-flavored; one of the best natives in quality; cling. Widely cultivated, but fails in sections subject to protracted drought. Americana. Wisconsin.

Downing (*Charles Downing*).—Large, roundish oval; color bright

red; dots numerous, small; bloom thin; stalk medium, slender, in regular cavity; suture a mere line. Flesh yellow; quality good to very good; clingstone. Season, a week later than Wildgoose. Hortulana. Iowa.

Emerald.—Fruit large, roundish; color greenish yellow, marbled with red shades. Flesh yellowish, with yellow veinings, tender, juicy, mild subacid; quality very good. A cross of Burbank with Brittlewood by Theo. Williams of Nebraska. Hardier than Burbank.

Excelsior.—Large, conical, flattened at top; color solid wine-red, with very small white dots; bloom heavy, light blue; stalk short, in wide shallow cavity; suture not present. Flesh yellowish, firm, with reddish shade near the pit; quality nearly best. Season, very early. Grown South. A hybrid from pit of Kelsey pollinated by Wildgoose.

Fairchild.—Large, oval, irregular; color variable from yellowish to deep red, with marbling and large gray dots; bloom lilac-colored. Flesh yellow, firm, subacid; quality good. A De Soto seedling, proving valuable where introduced. Americana.

Forest Garden.—Fruit large, nearly round, tending to oblong; suture quite distinct; color deep red when fully ripe, with numerous yellowish specks; bloom thin; stem long for a native, and slender. Flesh quite firm, subacid; quality good. Season quite late; pit almost free. Americana. Iowa.

Forest Rose.—Large, round, often oblique; color dark red, through which the yellow ground shows in dots; stem long, slender. Flesh firm, sweet, and best in quality. When cooked it shows no astringency. A very hardy variety of the species. Hortulana. Missouri.

Gaylord.—Large, roundish oblong, somewhat flattened at ends; suture quite distinct; color yellow, clouded with red; bloom thin, lilac-colored. Flesh yellow, melting, subacid, quite sweet; stone nearly free; quality good. Americana. Iowa.

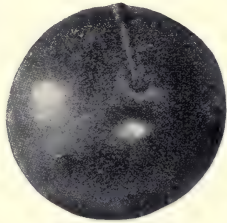
Golden Beauty.—Size of Wildgoose, roundish; color golden yellow, with white dots and white bloom; suture distinct. Flesh firm, meaty, bright yellow; stone small, rounded. A Texas variety, now grown east of lakes and South. Hortulana.

Hart (*Hart's De Soto*).—Large, oval, purplish red over orange, with blue bloom, and many small yellow dots; stem slender in shallow flaring cavity; suture a mere line. Flesh yellow, very good. In quality it is superior to the De Soto, and the tree stands drought far better. Americana. Iowa,

Harrison (*Harrison's Peach*).—Medium to large, roundish oblong; color light red on light yellow ground, with thin rosy bloom; stem long and slender. Flesh rich, juicy; pit partly free; ripens early in September. Americana. Minnesota.



Harrison.

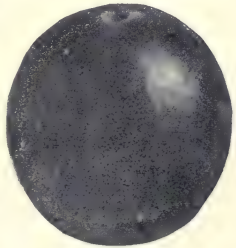


Hawkeye.

Hawkeye.—Roundish oval, often oblong conical; color yellow ground, covered with red and purple; dots numerous, gray; stalk short, in slight cavity; suture a mere line. Flesh firm, but melting, with pleasant flavor; quality good; cling. Americana. Iowa.

Hunt.—Large, roundish oval, flattened at stem end; color deep red, with numerous large dots and thick lilac-purple bloom; stalk medium, inserted in shallow cavity; suture on surface, but well defined. Flesh yellow, firm, with Wildgoose-like flavor; quality good; no astringency when cooked. Season, early. Americana and *Angustifolia* hybrid. Iowa.

Klondike.—Size medium to small, roundish oval; color lively yellow, shaded with red, mottled, and with numerous small dots; suture slightly depressed. Flesh very juicy, pleasant, subacid in flavor; quality fair to good. Season, early August. Americana. Iowa.



Hunt.

Lone Star.—Medium, oval, pointed; color red, with numerous white

dots and white bloom; stem slender, in broad shallow cavity. Flesh yellow, juicy, rich, and sweet; quality good; clingstone. Profitable South. *Angustifolia*.

Louisa.—Large, roundish oval, color deep red, with blue bloom and many small dots; stem short in shallow cavity; suture a mere line. Flesh firm; quality good; semi-cling. Originated in Missouri, but is hardy North. *Americana*.

Maquoketa.—Large, roundish oblong; color red, beautifully mottled; flesh yellow, firm, sweet, very good; unlike most of the natives it shows no astringency when canned; found native on the Maquoketa River in Iowa. *Hortulana*.

Marianna.—Size medium, round, oblong; color red, with numerous yellow specks and bloom. Flesh soft, juicy, sweet, but flavor not very agreeable. As grown from cuttings it is largely used for stocks. Probably a hybrid. Texas.

Milton.—Medium to quite large, roundish oval, or oblong; color dark red with numerous dots. Flesh melting, but quite firm; quality fair. A seedling of Wildgoose that ripens its fruit ten days earlier than its parent. Tree not hardier than the parent. *Hortulana*. Iowa.

Miner.—Size medium to large, roundish oblong; color dull purplish red, with many small yellow and gray dots. Flesh amber-colored, soft, juicy, rather rich, but with some astringency when cooked; poor bearer when not intermingled with other varieties. Starred in many States. Origin uncertain. *Hortulana*.

Newton.—"Large, red, freestone, and best in quality." This description is given by T. V. Munson, of Texas, where it originated. *Americana*.

New Ulm.—Large to very large, conical, flattened at upper end; apex rounded and pointed; color yellow ground overlaid with pinkish red; dots small; bloom thin, with lilac shade; stem short, in shallow cavity; suture indistinct. Flesh soft, melting, sweet; quality good. *Americana*. Minnesota.

Norby (No. 13).—Size of De Soto, roundish, flattened laterally, unequal; color dark red; skin thin, free from astringency; pit flat and roundish. Season, earlier than De Soto. South Dakota.

Ocheeda.—Medium to quite large if thinned, roundish oblong; color dull mottled red, with heavy bloom for a native variety. Flesh

yellow, rich, and sweet; nearly freestone. Season, rather late for the North, where it originated. *Americana*.

Odegard.—Large, oblong; color dark red. Flesh quite firm, juicy, subacid; quality very good. Popular in South Dakota, Minnesota,



New Ulm.



Ocheeda.

and Wisconsin. Farther south it is subject to plum pocket. Ripe in South Dakota early in August. *Americana*.

Oren.—Large to very large, as classed with the native varieties; form irregular, truncate, and with oblique apex; suture a red line not sunken; color yellow, mostly overspread with light to dark red with grayish dots; bloom thin, with purple shade. Flesh firm, yellow, pleasantly acid; quality good; clingstone. This appears to be hardy in north Iowa. *Hortulana*.

Piper (*Piper's Peach*).—Large, round, red, with thin bluish bloom. Flesh orange yellow, quite firm; quality good. A Minnesota variety, hardy far North. *Americana*.

Poole (*Poole's Pride, Kroh*).—Small to medium, oval; color pink and light red; dots small, scattering, with thin lilac bloom; stem medium, slender, in small shallow cavity; suture not distinct. Flesh soft, juicy; quality good; clingstone. Tree hardier than Miner. *Hortulana*.

Pottawattamie.—Small to medium, roundish oval; color bright red, with light-colored dots and thin bloom; stalk long, slender, inserted nearly on the surface; suture a mere line. Flesh yellow, sweet,

juicy, but not high-flavored; quality good. Not hardy north of forty-second parallel except in favored spots. *Angustifolia*. Tennessee.



Pottawattamie.



Quaker.

Quaker.—Large to very large, roundish oval; color purplish red, with yellow dots and blue bloom; stalk long, inserted in shallow cavity; suture a mere line. Flesh yellow, firm, sweet; quality good to very good. Americana.

Rockford.—Size medium to small, oval, slightly oblong; color dark red, with numerous small dots and quite thick lilac bloom; stem one and one-eighth to one and one-fourth inches long, in small cavity. Flesh meaty, firm, not very juicy; quality very good. Shows some traces of a cross with the *Domestica* species. Iowa.

Rollingstone.—Medium to large, round, flattened at ends; color mottled red and pinkish purple; dots small; bloom blue; suture obscure; stem long in shallow cavity. Flesh yellow, firm, sweet, very good. Americana. Minnesota.

Rue (*J. B. Rue*).—A variety of Americana originating in north Iowa, almost identical in size and shape with Stoddard, but the pit of the Stoddard is large and flat, while that of *J. B. Rue* is smaller and rounded. Both varieties are clings, but the *J. B. Rue* is much superior in quality of flesh. Americana.

Sanderson.—Large; roundish oval, regular; color light red on yellow ground, with blue bloom; skin quite thin, with slight astringency; quality very good; pit nearly free. A Minnesota variety becoming quite popular. Americana.

Sand Cherry (*Prunus Besseyi*).—This is known as Sand Cherry, but it is far more nearly allied to the plum. As yet we have no selected seedlings or hybrids of much value as fruits, but its seedlings have proven



Rockford.

Rollingstone.

valuable as stocks for about all varieties, native and foreign. The union seems perfect. The trees are dwarfed, come into bearing earlier, and are more regular in bearing than those on ordinary commercial stocks. The hardiness of tree of the Japan and other tender varieties seems also to be increased when on this iron-clad stock that lessens growth. Native from Kansas to Manitoba, west to Utah and Colorado.

Snooks.—Very large for the class, roundish oblong, somewhat pointed; cavity wide and shallow; color yellowish red, with bluish white bloom; dots very minute and numerous. Flesh yellow; quality good; pit large, with sharp margin. Season, middle of August in Iowa. Minnesota.

Snyder.—Large, roundish, oblique; color light red, with darker shades of red, large dots, and thin lilac bloom; stem stout, inserted in shallow cavity; suture a line. Flesh yellow, firm, quality good. A seedling of De Soto. Iowa.

Stoddard.—Large, round, often oblique, with unequal sides; color a yellow ground covered with shades of red, many white dots, and bluish bloom; stalk short and stout, inserted on the surface; suture obscure. Flesh yellow, quality good. Americana. Iowa.

Surprise.—Large, roundish oval; color dark red, with many small yellowish dots; stem medium in small cavity; suture distinct. Flesh pale yellow, firm; quality very good. Perhaps this will prove the hardiest and best of the Miner-like native plums. Hortulana. Minnesota.



Surprise.

Texas Belle.—Medium to large, nearly round; color red; quality fair to good. A variety originating in Texas, but now grown quite extensively South. Hortulana.

Van Buren.—Medium in size, round; suture indistinct; color waxy yellow, over-spread in part with light red and deep red cheek. Flesh sweet and rich in flavor.

Season, last of September. Valuable in the arid States. Tree has dwarf habit of growing, with low spreading top. Americana, of Mollis type.

Waugh.—Medium to large, roundish oval; color dark reddish purple. Flesh firm, meaty, yellow, and nearly free from the pit; quality good to very good. Produced by J. W. Kerr from pit of Chabot fertilized by Wayland pollen. Not yet tested north of Maryland. Maryland.

Wayland.—Large, roundish oblong; color shining pink, and red with white dots and thin white bloom. Flesh yellow, firm, meaty, good. A Southern variety, ripening late in southern Iowa. Hortulana.

Weaver.—Large, oblong, flattened at ends; color dark mottled red, with purplish bloom; suture well defined. Flesh firm, meaty, and very good; pit free. Tree is subject to plum pocket in some localities, but very valuable in others. Americana. Iowa.

Whitaker.—Large, red, with numerous light dots. Flesh and quality similar to Wildgoose, of which it is a seedling. About one



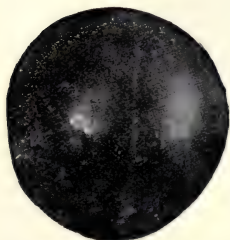
Waugh.

week later than its parent, and is larger, handsomer, and the tree is hardier and more fruitful on north limit of its growth. Hortulana.

Wildgoose.—Medium to large, roundish oblong; color light red, with shining expression that takes well in market. Flesh yellow, pulpy, sweet, but not high in flavor; much grown South for northern marketing. Hortulana.

Wolf.—Large, round; color yellow, blotched with red, and well covered with purplish bloom; stem medium stout, set in small cavity; no suture visible.

Flesh firm; quality good; pit free. A leading variety in the prairie States. Americana.



Wolf.



Wyant.

Wyant.—Large, oblong, flattened at apex, usually oblique; color purple red on yellow ground; stem short in quite large and deep cavity. Flesh firm, quality very good; stone nearly free. Probably the most popular of the Americana species. Originated at Janesville, Iowa.

Yellow Sweet.—Large, round; color yellow, shaded with red; bloom thin; suture quite distinct. Flesh firm, juicy, rich; clingstone. Season, last of August. Small stocky tree of Colorado type. Americana.

Yellow Transparent.—Medium to quite large, oblong; color bright yellow. Flesh quite soft and watery, but with sweet pleasant flavor; pit not free. Chicasa. Originated in north Texas.

THE FOREIGN VARIETIES OF THE PLUM AND THEIR HYBRIDS.

Abundance.—Large, roundish ovoid, with unequal sides; color bright red over yellow ground; dots numerous; stem short and strong;



Abundance.

suture distinct but shallow. Flesh firm, meaty, pleasant-flavored, but not high in quality. Season early. One of the most widely popular of the Japanese plums. *Triflora*.

Archduke.—Large, oval, necked, color dark blue with numerous russet dots, and heavy light-blue bloom; stem medium, stout, in medium-sized cavity; suture extends past the apex. Flesh yellow, meaty, juicy, subacid, very good. Popular east of the lakes. *Domestica*.

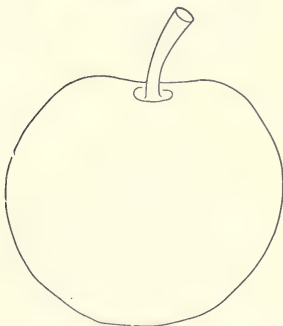
Arctic (*Moore's Arctic*).—Small to medium, roundish oval; color black with thin blue bloom; suture not distinct; stem slender, about three quarters of an inch long, in slight cavity; suture not distinct. Flesh yellowish amber color, tender, subacid; quality very good. Said to be very hardy, but in prairie States it is not hardier than *Lombard*. *Domestica*.

Bavay (*Bavay Green Gage, Reine Claude, Saint Clair*).—Large, roundish, somewhat compressed; color greenish yellow with stripes and splashes of green, overspread with thin bloom; stalk short, stout, and set in small cavity; suture distinct. Flesh yellow, melting sugary;

quality best; freestone. Season, September. Starred in many States where west European varieties thrive. Domestica. Belgium.



Arctic.



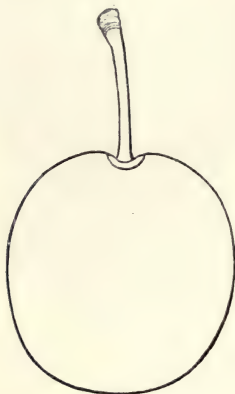
Davy.

Berkmans (*Sweet Botan*, *White-fleshed Botan*).—Medium to large, roundish oblong, slightly angular; color bright red in sun, splashed with yellow on shaded side, with many golden dots. Flesh yellowish, juicy, very sweet; quality very good at proper stage, but mealy and dry when very ripe. Triflora. Japan.

Berger (*Strawberry*).—Small to very small, much flattened; color bright red with bloom; suture distinct. Flesh yellow, firm, meaty,

freestone; pit very small. A distinct variety bearing fruit well down on the old wood. Where this class thrives it is valuable for home use, as it follows the cherries. *Triflora*. Japan.

Bleeker (*Bleeker's Gage*).—Medium, roundish oval, regular; color rich yellow with thin whitish bloom and numerous white dots, stem



Bleeker.

over one inch long, quite stout, inserted in very slight depression; suture obscure. Flesh yellow, rich, sweet; very good; cling. An old variety, yet popular as a home fruit. *Domestica*. New York.

Blue Imperatrice.—Large, irregular, heart-shaped; color dark blue with yellowish dots; stalk one to one and one-quarter inches long, slender, and inserted in shallow cavity; suture distinct but shallow. Flesh yellow, firm, juicy; quality nearly best; cling. *Domestica*.

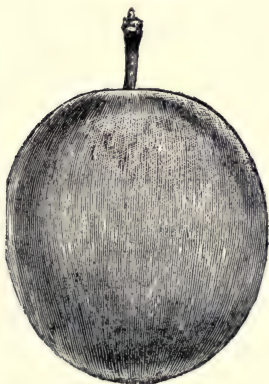
Blue Moldavka.—Large, oblong ovate; slightly irregular; color maroon scarlet with gray and blue bloom; suture distinct, terminating at apex; stalk half an inch long, rather stout, inserted in deep narrow cavity. Flesh greenish white, quite firm, juicy, subacid. Best for culinary use, but only fair for dessert; nearly freestone. *Domestica*. Russia.

Bradshaw.—Very large, obovate, and sometimes necked; color red-

dish purple, with light-blue bloom; stalk stout, curved, set in small cavity. Flesh yellowish, changing to brownish purple when fully ripe;



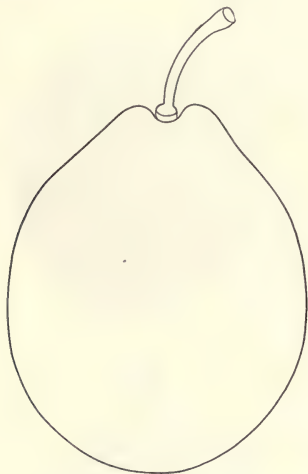
Blue Imperatrice.



Blue Moldavka.

rather coarse, juicy, subacid, pleasant; quality good to very good; pit nearly free. Domestica.

Bryanstone (*Bryanstone Gage*).—Size medium, oval, often roundish; color greenish yellow, with darker shade in the sun; bloom light; stem medium, stout, in shallow cavity. Flesh yellow, juicy, richly flavored; quality very good; of the Green Gage type. Grown mostly South. Domestica.



Braishaw.

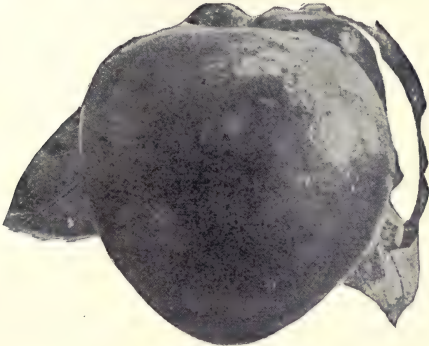
Burbank.—Large to very large, roundish conical; color dark metallic red, with yellow ground; dots small, numerous; suture shallow and often absent; stalk medium, quite stout, in a well-defined cavity. Flesh yellow, close-textured, rich, sugary, very good.

In Iowa this has proven the hardiest in tree of the Japan varieties tested. Its fault is overbearing where thinning is neglected. Triflora.

Chabot (*Yellow Japan*).—Large, heart-shaped, or oblong conical; color at West yellow overspread on sunny side with cherry-red, with blue bloom; stalk short, stout, in abrupt, quite large cavity; suture not distinct usually. Flesh yellow, juicy, rich, and sweet; quality good to very good. Season, last of September. Triflora.

Columbia.—Large, nearly round, sides usually unequal; color of

skin purple with numerous light brown dots that show through the blue bloom; stalk about one inch long, stout, inserted in small narrow cavity. Flesh light yellow, rich, sugary, very good; stone nearly free. Domestica. New York.



Chabot.

Communia.—Large, long oval, flattened at both ends; color reddish purple; bloom blue with large gray dots; suture distinct, nearly on the surface; stalk three eighths of an inch long, stout, in broad deep cavity; apex slightly depressed. Flesh firm, meaty, juicy, mild subacid; quality good to very good; pit free. Introduced by the German colony in Clayton County, Iowa, from Denmark. Domestica.

Czar.—Medium to large, roundish-ovate; color dark purple with bluish bloom; stem short in narrow cavity; suture a mere line. Flesh yellowish, firm, sweet, good. Grown in Western New York and Ontario. Domestica.

Climax (Royal).—Very large, heart-shaped; color dark red with varied-sized yellow dots; stem short, stout, inserted in deep and abrupt cavity; suture distinct, but not deep; apex rounded. Flesh yellow, firm, sweet, rich, very good; stone free. A hybrid of Botan pollinated with Simoni by Burbank of California. Grown east of the lakes.

Clyman.—Medium to large, roundish; color dark purple with heavy blue bloom; suture distinct; apex somewhat flattened; quality

good; stone free. Season, early. A California variety grown in Texas and the South. Domestica.

Damson.—In a general way the description given thirty years ago by Downing will apply to the many seedling varieties found from the Atlantic to the Pacific. He wrote: "Fruit small, oval, about an inch long; skin purple, covered with thick blue bloom. Flesh melting, juicy, rather tart; separates partially from the stone. Season, September." In the north half of Iowa the Danish Damson has most value on account of hardness. This was introduced by H. Knudson of Springfield, Minnesota, and disseminated for trial by the writer. In milder climates what is known as French Damson and the Frogmore Damson have most value as budded trees. Domestica.

Deaton (*Tobe's Gage*).—Medium to large, roundish oval; color yellow with whitish bloom and scattering large yellow dots; stem medium, stout, in deep abrupt cavity; suture shallow. Flesh greenish yellow; very good. It seems to be identical with the Tobe's Gage, an old variety of Pennsylvania. Domestica.

De Caradeuc.—Size medium, roundish; color purplish red with thin bloom. Flesh yellow, soft, juicy; quality fair. Season, early. Like its relative the Marianna it makes a large tree and is much grown in the Southeastern States. South Carolina. Cerasifera.

Diamond (*Black Diamond*).—Large, oval; color dark blue with blue bloom; dots small; stalk short, stout; suture distinct, but shallow. Flesh yellow, coarse-grained, not very juicy; quality poor for dessert, but good for culinary use. Widely grown across the continent. Domestica.

Duane (*Duane Purple*).—Large to very large, oblong, egg-shaped, swollen on suture side; color somewhat darker than Lombard, and dark blue when fully ripe; dots prominent; stalk three-quarters of an inch long, slender, inserted in narrow shallow cavity; suture shallow. Flesh yellow, meaty; quality good; partial freestone. Season, early August. Mostly grown commercially on the west coast. Domestica.

Early Red.—Large, oval, smooth, and regular; color dark red, with white dots that show through the lilac-colored bloom; stalk medium, stout, in regular shallow cavity; suture distinct, in slight valley. Flesh firm, meaty; quality very good; cling. Season, early August. Tree very hardy. Domestica. Russia.

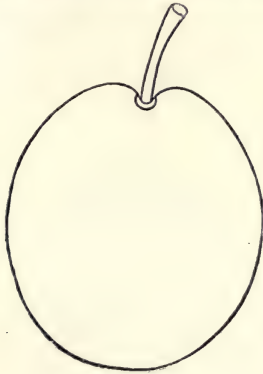
Early Rivers.—Size medium, roundish oval; color deep purple, covered with thin bloom; stem one-half inch long in small cavity.

Flesh yellowish, juicy, sweet, with pleasant subacid flavor; pit free. Grown in western New York. England.

Empire.—Large oval; color dark purple; quality good. Season in Ohio, early September. Not generally grown, but commercially in localities. Domestica.

Engle.—Medium in size to small, roundish oval; color yellow with traces of green; suture obscure half way round. Flesh firm, close-grained, yellow; flavor rich, quality very good. Matures last of July. About as hardy as Lombard. Domestica.

Englebert (*Prince Englebert*).—Medium, regular, oval; color dark blue with many light-colored dots and blue bloom; stalk medium,



Englebert.

slender, inserted in rounded shallow cavity; suture obscure. Flesh yellow, quality good. Season quite early. Fruit in clusters; freestone. Grown east of lakes and in the South. Domestica.

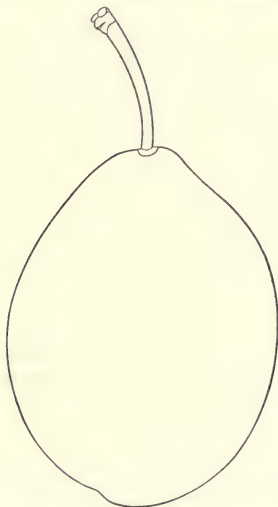
Field.—Large, oval; color purple with blue bloom; stem one inch long in small narrow cavity. Flesh greenish yellow, quality very good; clingstone. Season, earlier than Bradshaw, of which it is a seedling.

German Prune.—Medium, long oval; sides very unequal, and elongated at the top; suture very distinct; color purple with heavy blue bloom, stalk three-quarters of an inch long, curved, slender, inserted at top of fruit without cavity. Flesh firm, greenish yellow, sweet, and

pleasant when fully ripe; pit free. As with the Damson this variety has varied when locally grown from pits in Europe and America. Domestica.

Giant. (*Giant Prune*).—Very large, dark crimson on yellow ground. Flesh yellow, flavor good. This very large prune has not met expectations as a drying fruit, but it is considerably grown for market on the west coast and in the South. Domestica.

Glass (*Glass Seedling*).—Large, oval, slightly irregular at apex; suture distinct in shallow depression that extends beyond the apex; color dark purple with thin blue bloom; stalk three-quarters to one inch long, stout, in narrow deep cavity. Flesh greenish yellow, juicy, sweet, very good; pit free. Tree very hardy, upright, with peculiar glossy dark green leaves. Domestica. Originated in Canada.



Golden Drop.

Golden Drop (*Coe's Golden Drop, Silver Prune*).—Large to very large, oval, with short neck and unequal sides; color golden yellow with numerous yellow dots; bloom also yellow; stalk quite long, stout, in

shallow abrupt cavity; suture a valley extending beyond the apex. Flesh meaty, quality very good; cling. Popular where the tree proves hardy nearly across the continent. *Domestica*.

Golden Prune.—Large, long oval; color creamy yellow with numerous dots; bloom grayish and thin; stalk short and stout inserted in small abrupt cavity; suture shallow. Flesh yellow, firm; quality fair to good. Only grown on the west coast, commercially. *Domestica*. Oregon.

Goliath.—Medium to large, roundish to oval; color red or purplish with blue bloom and yellowish dots; stem short, stout, with show of pubescence, inserted in medium regular cavity; suture shallow. Flesh greenish yellow, quality fair; pit free. Grown largely for kitchen and market. *Domestica*.

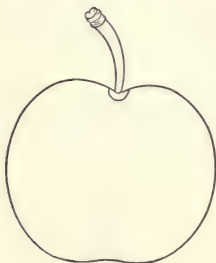


Grand Duke

Grand Duke.—Large to very large, oval or obovate; color dark blue with dark-blue bloom; stalk one inch long in narrow shallow cavity; suture quite deep. Flesh yellow, firm, quality good to very good; cling.

Season, late. Seems to be quite free from rot east of the lakes. Domestica.

Green Gage.—Small, obovate; color green or yellowish green when mature; at the West usually marbled with red; suture not very



Green Gage.

distinct; stalk one-half to three-quarters of an inch long, slender, in very shallow cavity. Flesh pale green, melting, juicy, luscious, best in quality; pit free. In the prairie States this succeeds most perfectly top-worked on a hardy stock. Domestica.

Gueii (*Blue Magnum Bonum, Big Blue*).—Large, roundish oval, narrowed at apex to small point; color purple with thick blue bloom; stalk rather long, slender, inserted in large deep cavity; suture obscure. Flesh pale yellow, rather coarse, juicy, sweet, but not rich. Used mainly for kitchen and market; nearly freestone. Domestica. New York.

Hale (*Prolific*).—Medium to large, round, with unequal sides; color yellow, thinly covered with mottled red; yellow dots numerous; bloom thin; stalk slender; suture distinct. Flesh yellow, juicy, with rich peach-like flavor; cling. Season, early. Triflora.

Hand (*General Hand*).—Large, round to roundish oval; color golden yellow, with marbling of greenish yellow; dots small; bloom light-colored; stalk medium in length, rather slender, in broad shallow cavity; suture shallow. Flesh yellow, not firm; quality very good to best. Does best in the arid States. Domestica. Pennsylvania.

Hudson (*Hudson River Purple Egg*).—Large long-oval; color red or purplish red, with bluish bloom and numerous small dots;

stem long in quite deep abrupt cavity; suture shallow. Flesh greenish yellow, firm, good; cling. Domestica. New York.

Huling (*Superb*).—Very large, roundish oval; color greenish yellow with thin pale bloom; stalk strong in small round cavity. Flesh



Hand.

greenish yellow, quite coarse, with sprightly and pleasant flavor, good; cling. Domestica. Pennsylvania.

Hungarian Prune.—Fruit medium to large, elongated, pointed at each end; color dark blue with light-blue bloom; suture in depression terminated by rounded point at apex; stem three-quarters of an inch long, stout, inserted at upper end of the suture without cavity. Flesh firm, close-textured, juicy, acid; best for culinary use; free stone. Season of perfect maturity, middle of September. This is distinct from Pond's Seedling, often grown under this name. Russia.

Ickworth (*Ickworth Imperatrice*).—Medium to large, obovate; color purple-traced with peculiar streaks and shades of yellow; stem quite long, thick. Flesh greenish yellow, rich, quality very good. If laid away wrapped in tissue paper it is an unusual keeper. Domestica. England.

Imperial Gage.—Medium to large, oval; color pale green with tinge of yellow when fully ripe, showing the green in stripes; stalk one inch long, stout, in very shallow cavity that flattens the top;

bloom white. Flesh greenish, melting, rich, best in quality; pit nearly free. Domestica. New York.

Italian Prune. (*Fellenberg*).—Size medium, oval, tapering to pointed ends; color dark purple with deep-blue bloom; stalk one



Italian Prune.

inch long, in very small cavity. Flesh greenish yellow, juicy, sweet, good. Domestica.

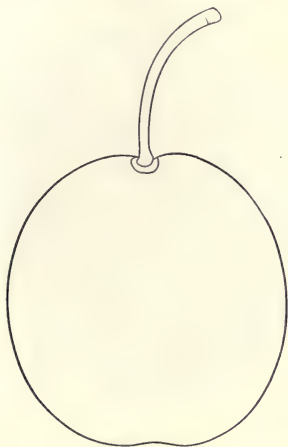
Jefferson.—Large, oval, sides slightly uneven at top; color golden yellow with quite deep-red cheek; bloom thin and light-colored; stalk one inch long, in very small cavity. Flesh orange-colored, rich, luscious; pit free; best in quality. Commercial in several States. New York.

Kelsey.—Size very large, heart-shaped, usually lop-sided; color bright purple on yellow ground, with numerous showy dots and whitish bloom; stem slender in deep narrow cavity; suture shallow. Flesh yellowish, quite firm, rich, refreshing, nearly freestone. Tree not much hardier than the Fig; but as grown in mild climates it is the fruit-vender's favorite. Triflora.

Kerr.—Medium to large, conical, with deep suture; color orange-

yellow with a cream-colored bloom. Flesh juicy, sweet, and rather rich in flavor; pit not free. Tree quite tender. Triflora.

Kingston.—Medium in size, oval, color blue with blue bloom and numerous small dots; suture shallow; stem medium in length, in



Jefierson.

moderately deep cavity. Flesh greenish yellow; quality fair to good. Originated in Ontario, Canada, Domestica.

Lafayette.—Large, roundish, color purple with heavy bloom. Flesh juicy, rich, quality very good; pit free. Season, last of September. Grown east of the lakes. England.

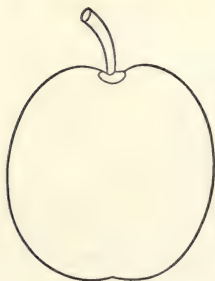
Lincoln.—Large, oblong oval; color reddish purple, with showy bloom; stem medium, inclined, and inserted at top of slight neck. Flesh light yellow, sweet, rich-flavored; freestone. A seedling of Green Gage now popular in New Jersey and Pennsylvania. Domestica. Pennsylvania.

Lombard.—Medium to large, somewhat flattened at ends; color purplish red with whitish dots and blue bloom; stalk short, slender, inserted in broad abrupt cavity; suture shallow. Flesh yellow,

juicy, and good; cling. Has been widely planted South and in eastern States. Domestica.



Lincoln.



Lombard.

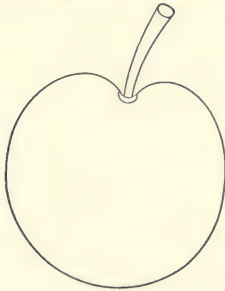
Long Blue.—Large, oblong, oval, slightly irregular, flattened at apex; color dark red with light-blue bloom through which the

numerous small gray dots show; suture distinct; apex depressed with elevated surface beside it; stalk short, curved, stout, in deep narrow cavity. Flesh yellow, firm, juicy, subacid; quality fair to very good; pit nearly free. Tree very hardy. Russia.

Marketman (*Shipper*).—Large, nearly round; color light red with whitish bloom. Flesh red, firm, juicy, half-cling. This proves an admirable shipper, and its red-fleshed fruit is seen in most markets. Triflora.

Merunka.—Fruit medium to large, blunt oval in shape; color crimson-red with profuse light-blue bloom, including the cavity; dots numerous; suture shallow, but distinct; apex a russet dot at end of suture; stalk one inch long, quite stout, curved, inserted in moderately deep regular cavity. Flesh yellowish with white veins, mild subacid, rich; quality very good; pit free. Season, August 1st to 10th. Domestica. Russia.

McLaughlin.—Large, roundish oblate, flattened at each end; color russeted yellow, blotched with light red and purple at the base;



McLaughlin.

stalk three-quarters of an inch long in very shallow cavity. Flesh firm, sweet, and rich in flavor; best in quality; cling. Domestica. Maine.

Minnesota.—Large to very large, ovate, somewhat uneven at apex, with depression at the suture, which extends beyond the apex; stalk one-half to three-quarters of an inch long, stout, inserted in deep and narrow cavity. Flesh yellow, fine-grained, juicy, subacid, good to very good; pit small, oblong, ridged, and free from the flesh. Denmark.

Monarch.—Large to very large, roundish oval; color darkish purple with heavy bluish bloom; stalk short, stout, and inserted in a deep broad rounded cavity; suture obscure. Flesh yellow, quality good; stone free. A shipping variety in New York and Delaware. Domestica.

Monroe (*Monroe Egg*, *Monroe Gage*).—Small to medium, roundish oval; color yellow with white dots and whitish bloom; stalk quite long, inserted in shallow cavity; suture obscure. Flesh yellow, with best flavor; quality very good to best; freestone. Grown mostly for home use east of the lakes and in Utah. Domestica.

Niagara.—Under this name is grown in Western New York commercially a variety much like Bradshaw in size, color, and quality, yet it probably is not identical in tree and fruit; but as yet the distinctive differences have not been indicated. Domestica.

Nonesuch (*Lucombe's Nonesuch*).—Medium to large, roundish oval; color greenish, changing to yellow, with whitish bloom; stem short, straight, in a wide cavity; suture distinct, broad. Flesh quite firm, greenish yellow, good; clingstone. Much like Green Gage. Domestica.

Normand.—Medium to large; somewhat heart-shaped at base, conical, color golden yellow. Flesh firm, meaty, yellow, quality very good; pit free. Triflora.

Occident (*Burbank's Sultan*).—Very large, nearly round; color dull red over a greenish ground with many yellow dots and blue bloom; stem short, stout, inserted in medium deep cavity; suture distinct; shallow. Flesh dark red, firm, flavor rather acid, fairly good; pit free. A hybrid developed by Burbank of California; grown east of lakes and South.

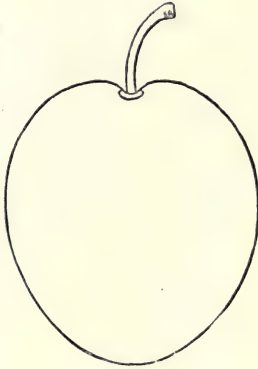
October (*October Purple*).—Large, heart-shaped, somewhat oblate; color dark purple in varied shades. Flesh yellow, firm, juicy, very good; stone small, but clings to the flesh. A Burbank seedling now grown east of the lakes and South. Triflora.

Ogon.—Medium in size, roundish, not regular, flattened at ends; color lemon-yellow, dots numerous; bloom with whitish shade; stalk short, inserted in evenly rounded cavity; suture well defined. Flesh yellow, firm, meaty, not very juicy, good. Nearly as hardy as Burbank. Triflora.

Orange (*Orange Gage*, *Wager*).—Very large, oval, flattened at each end; color yellow with purplish red at cavity, and with white pro-

jecting dots; stem short, quite rough, inserted in narrow regular cavity. Flesh yellow, juicy, good; partially freestone. Domestica. New York.

Orleans (*Smith's Orleans, Red Magnum Bonum*).—Large to very large, oval, but somewhat widest at stem end; color purple in the



Orleans.

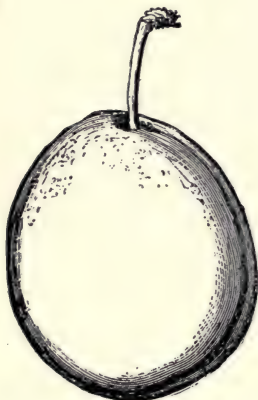
sun, with lighter cast in the shade; bloom dark blue; stalk slender, short, inserted in deep, narrow cavity. Flesh yellow, quite firm, juicy, good to very good; cling. Grown mostly east of the lakes. Domestica. England.

Oullin (*Oullin's Green Gage*).—Medium in size, roundish oval; color green, changing to yellow in sunny climates; bloom white with whitish dots; stem quite long, in abrupt shallow cavity; suture obscure. Flesh yellowish, good; of Green Gage type. Germany.

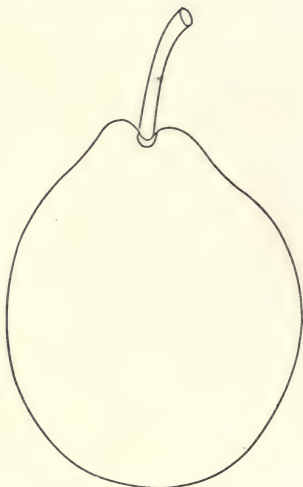
Peach.—Large to very large, roundish, flattened at ends; suture very distinct, apex depressed; color brownish red with dark dots and pale bloom; stalk short, stout, in narrow shallow cavity. Flesh light yellow, somewhat coarse, juicy; flavor pleasant, good; pit free. Domestica.

Peters (*Peters' Yellow Gage*).—Medium to large, roundish oval; color greenish yellow, often blushed, with white bloom and many yellow dots; stem short, stout, set in a large cavity; suture broad.

and shallow. Flesh yellowish, juicy, sugary; partially freestone; good to very good. A good variety of the Green Gage. A much longer-stemmed variety is locally grown under this name.



Peters.



Pond.

Pond (*Pond's Seedling, Fonthill*).—Very large, oval or obovate, with short neck; color reddish violet with many brown dots and handsome whitish bloom; stem medium, inserted in narrow, abrupt, shallow cavity. Flesh rather coarse, juicy, pleasant-flavored, good; freestone. The Pond's Seedling of the New England States is small, poor in quality, and not true to name.

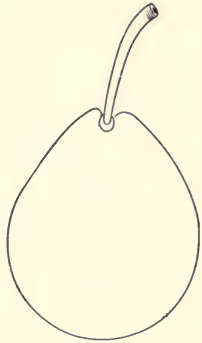
Pride (*Shipper's Pride*).—Large, oval, color dark purple. Flesh firm, quality good. Grown for market mainly in New Jersey, New York, and Southern Iowa. Domestica.

Prune d'Agen.—Medium in size, obovate, somewhat necked; color reddish purple with heavy blue bloom and numerous small dots; stalk one inch long, curved, in small cavity. Flesh greenish yellow, rich, very good to best; nearly free from pit. Grown largely

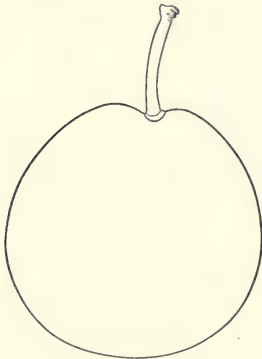
on the west coast, but also in States East and South to less extent. Domestic.



Pride.



Prune d'Agen.



Purple Favorite.

Purple Favorite.—Medium in size, roundish obovate, without suture; color brownish purple, with light brown on the shady side and numerous yellow dots; bloom light blue; stalk three-quarters

to one inch long, in shallow cavity. Flesh juicy, melting, quite sweet, best in quality; stone free.

Purple Gage.—Medium size, roundish, flattened at ends; suture distinct, in a depression; color violet with light-blue bloom; stalk one inch long, curved, in narrow cavity. Flesh firm, greenish yellow, sugary, flavor best; very good. Europe. Domestica.

Purple Reine Claude (*Reine Claude Violette*).—Size medium, roundish; color purple with blue bloom; stem short, stout, inserted in shallow cavity. Flesh greenish yellow, rich, sugary; quality best. A valuable home variety. East of the lakes.

Quackenboss.—Large, roundish oval; color deep purple with blue bloom and blue dots; stalk quite long in flaring shallow cavity; suture a line. Flesh with greenish shade, firm, rather coarse, sprightly; quality fair to good; semi-cling. One of the hardiest of the Domestica group. New York.

Red June (*Red Nagate*).—Medium to large, roundish conical; color coppery red marbled with purple red, with smooth glossy surface of skin; dots numerous, small, light-colored; cavity large, regular, and deep, with leather-cracking of surface; suture distinct to apex and often to opposite side. Flesh pale yellowish white, veined, tender, melting, subacid; quality good; nearly freestone. Triflora.



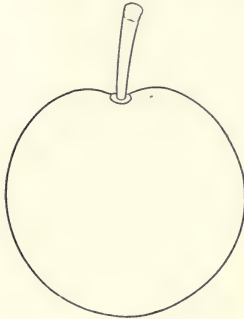
Red June.

Richland.—Medium to small, oval; pointed at both ends; color reddish purple with thin blue bloom; suture not very distinct; stem three-quarters to one inch long, slender, in narrow deep cavity. Flesh greenish yellow, juicy, sugary, very good; Freestone when fully ripe. Has proven hardy west of the great lakes. Domestica.

Royale Hative (*Early Royal*).—Medium in size, roundish, widest at the base; color light purple, dotted and streaked with brownish yellow; bloom blue; stalk half an inch long, stout, inserted without cavity. Flesh yellowish, rich; high-flavored, very good; stone free. Domestica. France.

Russian Mirabelle.—Small, round, flattened at each end; color bright yellow; suture indistinct, but well defined as it passes the apex

and extends in a valley on the opposite side; stalk one-half to three-quarters of an inch long, quites tout, inserted in narrow cavity. Flesh yellow, fine-grained, juicy, rich; quality best; freestone. This differs



Royal Hative.

in tree and fruit from the Mirabelle from West Europe and is much hardier in tree. Russia.

Saratoga.—Large, roundish oval; color dull red or dark purple with thin bluish bloom and many small whitish dots; stalk one inch long, in deep and narrow cavity. Flesh pale yellow, firm, sprightly, good; clingstone. New York.

Satsuma (Blood).—Large, broad conical, usually pointed at apex; color dark shining red with whitish or bluish bloom and numerous dots; stem short, stout, inserted in deep abrupt cavity; suture obscure. Flesh red, firm, quite acid; quality good; cling. Tree less hardy than its class, and it is only productive when planted with other varieties. Triflora.

St. Lawrence.—Size large, roundish oval; color dark blue with blue bloom and rather obscure dots; stem short, pubescent, in deep regular basin; suture shallow. Flesh yellow, quality good. A seedling of Smith's Orleans. Domestica. New York.

Shropshire (Shropshire Damson).—Small, oval or obovate; color dark purple with blue bloom; stalk half an inch long, inserted on surface; suture not found. Flesh melting, juicy, quite acid; quality

fair to good; partial freestone. Much grown in many States for culinary use mainly. England.

Simon (*Prunus Simoni*).—Large, flattened; color dark red with many large and small dots and faint bloom; stalk short, in deep and wide cavity; suture shallow. Flesh yellow, firm, meaty. Flesh variable in different climates; in the South it is often sweet and prized by many. Season, early. Has proven valuable when crossed with other species. China.

Smith Orleans.—Large, oval, widest at base; suture deep; color reddish purple and very dark when ripe; bloom dark blue; stalk slender, in narrow deep cavity. Flesh yellow, quite firm, rich; quality good; cling. Popular in several States. Domestica.

Spanish King.—Large, oval, regular; color scarlet with blue bloom; suture distinct in depressed valley, which extends beyond the apex; stalk half an inch long, stout, in deep broad abrupt cavity. Flesh greenish yellow, firm, juicy, good; pit not free. Not identical with Lombard, as often claimed, but quite similar in fruit. Domestica.

Spaulding.—Large, oval; color green with yellow on sunny side and whitish bloom; suture distinct; stalk medium, in shallow cavity. Flesh yellow, tender, juicy, sweet; good to very good; freestone. Pennsylvania. Domestica.

Tatge.—Medium to large, regular, oblong, with ends flattened; cavity broad and deep; suture usually broad and deep; color purplish red with light green patches in the shade. Flesh firm; quality much like Lombard, and it ripens at the same time; but the tree is somewhat harder than Lombard, and less subject to rot of fruit. Domestica.

Tennant.—Large, purple, and best in quality. A large prune originating in Washington and now grown in Texas and eastward to New Jersey and Maryland. Domestica.

Ungarish Prune.—Medium to large, ovate, flattened at sides; color dark purple overlaid with dark-blue bloom; suture in broad deep valley, passing the apex and extending to an elevated point near the stem; stalk three-fourths to one inch long, very stout, inserted on a raised point. Flesh greenish yellow, firm, juicy, rich; quality best; freestone. Tree a low-spreading grower and hardy in trying climates. From Russia.

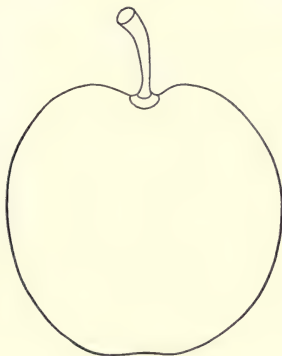
Victoria (*Sharp, Sharp's Emperor*).—Large to very large, oval; color pinkish red with bluish bloom and many whitish and bluish dots;

stem short, pubescent, inserted in abrupt, quite deep cavity; suture shallow. Flesh yellow, rich; quality good to very good; pit free. It has been so long known as *Victoria* that a change to "Sharp," as now suggested, will be difficult to establish.

Voronesh Yellow.—Large, egg-shaped, but enlarged and rounded at lower end; suture distinct; stalk three-quarters to one inch long, stout, inserted in narrow deep cavity. Flesh yellow, close-textured, tender, melting; very good to best; freestone. Russia.

Wangenheim.—Medium, ovate; color dark blue with heavy blue bloom; stem slender, short, in shallow cavity; suture obscure or faint. Flesh yellow, firm, sweet; quality good; freestone. Grown commercially east of the lakes and in the South. Domestica.

Washington.—Very large, roundish oval; suture obscure, except near the cavity; color in the interior bright yellow, but in moister sections with



Washington.

patches and marbling of green; stalk three-quarters of an inch long, set in wide shallow cavity. Flesh yellow, firm, sweet; good to very good; freestone; starred in several States; across the continent. Domestica.

White Nicholas.—Large, regular roundish oblong, somewhat truncated; color blue with blue bloom; stem short, stout, inserted in deep abrupt cavity; suture broad, but shallow. Flesh juicy, rich-flavored, very good. Season, last half of August. Russia.

Wickson.—Large to very large, heart-shaped; color dark red with heavy bluish bloom and many yellow dots; stem very short, stout, and inserted in abrupt cavity; suture distinct. Flesh yellow, firm; quality good. Grown East and South, but usually not a satisfactory bearer. A hybrid between Simoni and Triflora.

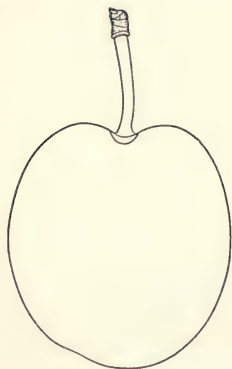
Willard.—Medium, roundish oblong, with tendency to angles of surface; color claret-red with small yellow dots and whitish bloom; stem short, stout, inserted in narrow deep cavity; suture obscure. Flesh firm, whitish, quality poor; freestone. Triflora.



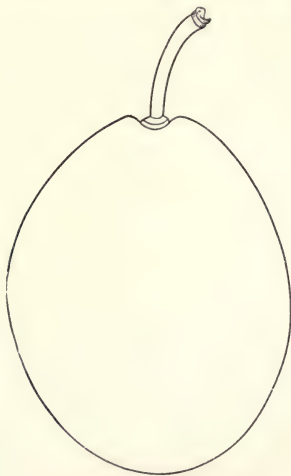
Willard.

Wyzerka.—Large, oblong oval, regular; color bright yellow; suture distinct; stalk one-half inch long, in shallow cavity. Flesh fine-grained, juicy, with decided peach flavor; quality nearly best. A very hardy tree and a regular bearer. Russia.

Yellow Aubert.—Large, ovate; color bright



Yellow Gage.



Yellow Egg.

yellow; stalk one inch long, inserted in fleshy ring in narrow shallow cavity. Flesh yellow, juicy, rich, quality good; clingstone. Tree very hardy and a regular bearer. Russia.

Yellow Egg (*White Magnum Bonum*, *White Egg*).—Very large, oval, narrowing at both ends, with an approach to pyriform at the top; color yellow when ripe, with thin white bloom and numerous white dots; stem an inch long, stout, inserted at top of fruit in folded border; suture well defined. Flesh yellow, sweet when ripe; quality barely good. Use, kitchen and market. Locally, seedling varieties are grown quite similar in size and quality. Domestica.

Yellow Gage (*Prince's Yellow Gage*).—Medium to large, oval, broadest at upper end; color golden yellow, clouded, and covered with thick white bloom; stalk one inch long, in small round cavity. Flesh yellow, rich, melting; pit free. Domestica. Long Island.

Yellow Moldavka.—Large, pear-shaped, with well-defined neck; color bright yellow; suture distinct, terminating at the rounded apex; stalk one inch long, stout, inserted at top of the neck. Flesh yellow, fine-grained, juicy, subacid; quality nearly best; pit narrow and one and a quarter inches long, free from flesh. Russia.

THE APRICOT.

Section No. 184 of Part I tells of the close relation of this beautiful and excellent fruit to the Plum and Peach, and something of its history and possible improvement, and Section 149 discusses the pruning of the Apricot and Peach.

The fruit ripens after the early cherries and prior to the plums and peaches, and it is a handsome and delicious fruit, only inferior to the best peaches; and as Downing says: "In the fruit-garden it is a highly attractive object in early spring, as its charming flowers are the first to expand. It forms a fine spreading tree about twenty feet in height, and is hardy enough to bear as an open standard south of the forty-second degree of latitude in this country."

The cultivated varieties are developed from *Prunus Armeniaca* of East Europe. The Japanese Apricot (*Prunus Mume*) is cultivated mainly for its flowers, and the plum-like Black Apricot (*Prunus dasycarpa*) has no varieties desirable for dessert or culinary use, mainly on account of its fuzzy skin and also fuzzy pit. The culti-

vated varieties may be budded or grafted on all the species of the plum, and it buds well on the peach. In New York, seedlings of the *Domestica* plums are preferred for stocks, but in the prairie States the seedlings of our native plum (*Prunus Americana*) are preferred, setting the trees in orchard quite deeply on dry soil. If the seedlings are transplanted prior to budding or grafting to give a good root system, the native stocks have supported the tops of full-grown trees better than any other stocks yet tested. In Southern California commercial growers almost invariably use peach stocks, mainly for two reasons: (1) the peach roots are best adapted to the light soils, where this fruit does best; (2) the peach roots are not as apt to be eaten by rodents as are those of the apricot or plum.

The main drawback to the profitable growing of the Apricot where the Peach succeeds comes from the early blossoming of all varieties, thus exposing the ovaries to spring frosts, and the fondness of the curculio for its fruit. In a few cases the writer has observed a positive increase of crop by spraying with milk of lime in midwinter and again prior to blossoming. The white color seems to retard the blossoming quite materially, and the lime appears to lessen the attacks of the curculio. In addition the spraying with arsenite of lime solution (156) just as the buds begin to expand is a decided gain in lessening the damage by curculio and some other insects.

LEADING VARIETIES OF THE APRICOT.

Alexander.—Medium to small, oblong, flattened somewhat at ends, color light orange-yellow with show of color in the sun. Flesh tender, juicy, sweet, quality good. Tree hardier than most varieties. Quite popular in Oregon. Russia.

Alexis.—Large to very large, yellow, with red cheek. Flesh subacid, very good. Season middle of July. Quite widely grown, and popular as far south as Maryland. Russia.

Blenheim.—Size medium to large, oval; color orange, with scale-like spots; cavity deep; suture distinct; apex somewhat depressed. Flesh yellow, firm, free from the stone; quality very good. Popular in Southern California, Arizona, New Mexico, and Texas.

Boston (*Boston Nectarine*).—As grown at Springfield, Illinois, this description is given: "Large, deep yellow, with bright blush. Flesh



Blenheim Apricot.

(To face page 330.)

sweet and pleasant in flavor; pit free. Tree hardy and productive Season, last of August and first of September."

Breda.—Size medium, roundish, somewhat angular; color orange-yellow with darker shade in the sun; suture distinct. Flesh orange-yellow, rich, high-flavored, quite juicy; freestone. Kernel is sweet and is eaten as a nut in France. Commonly grown east of the lakes, and double-starred in Utah.

Budd.—Medium to large, oblong; color light orange with blush on sunny side. Flesh quite juicy, sweet, with peach flavor. Season, very early. Hardier than most varieties. Russia.

Cluster.—A profitable variety grown in Texas. Mr. T. V. Munson says of it: "This valuable variety was introduced by A. M. Ramsay & Son. It is claimed to have never missed a crop any season since its introduction."

De Coularge.—Grown in Western New York and reported to be large in size and nearly best in quality. Season, last of July. No description is available.

Dirickson.—Large, roundish; color pale yellow; suture does not extend to apex. Flesh lemon-colored; quality very good; pit very small. Originated in Maryland, where it is much liked by planters.

Early Golden.—Small, roundish oval; color pale orange, with smooth skin; suture distinct. Flesh yellow, quite juicy, sweet; quality very good to best; freestone. New York.

Early Moorpark.—Much like Moorpark in size, shape, and color, but ripens much earlier. Roundish oval, with deep suture; color yellow, mottled, with show of crimson on exposed side.

Eureka.—Large, roundish. Flesh fine-grained, juicy, rich; quality very good. Grown in Texas, New Mexico, Arizona, and on the west coast.

Gibb.—Size medium, roundish; suture distinct; color yellow. Flesh rich, juicy. Season, very early. Grown south as far as Maryland. Russia.

Gold Dust.—Medium in size, roundish oblong; color orange-yellow, with some light dots; cavity narrow and deep; apex ribbed and compressed. Flesh yellow, juicy, slightly acid; pit free; quality good. Grown in Texas and the Southwest.

Harris.—As large as Orleans Plum; oval, somewhat flattened; color bright yellow, with red cheek; suture distinct. Flesh tender, juicy; quality very good. Prized as far south as Maryland and Georgia. New York.

Hemskirke.—Size large; roundish oblate in form; color orange, with red cheek; cavity shallow, rough, uneven; suture distinct, extending to compressed apex. Flesh orange-yellow, juicy, sprightly; freestone; pit quite small. Mostly grown on the Pacific Coast, where it stands third on the popular list.

Large Early.—Medium in size, oblong, compressed at apex; color pale orange, often with red cheek; surface rough; cavity shallow, ribbed; suture indistinct. Flesh creamy white, firm, rather dry; stone not wholly free; quality good. Grown in Colorado and Utah, largely.

Large Canino (*Canino Grosso*).—Medium to large; color orange-yellow, with red cheek. Flesh reddish yellow, melting, high-flavored, juicy and rich; quality best. An Italian variety, grown in parts of the South.

Luizet.—Large, oval, apex depressed; color orange, with red cheek; cavity deep, ribbed; suture distinct. Flesh yellow, firm, not wholly free from stone; quality very good. Becoming popular in the Southwest and on the west coast.

Montgamet.—Large, ovate, flattened at apex; color yellow; cavity deep, abrupt. Flesh yellow, firm, quite juicy; stone free. This variety has rapidly come into notice within recent years from New York to California.

Moorpark.—Large to very large, compressed at apex; color yellow and orange, often with russet appearance and always with numerous specks and dots; cavity shallow, not regular; suture indistinct. Flesh yellow, sweet, juicy, rich; freestone. One of the most popular varieties across the continent. On the west coast rather shy in bearing.

Myer.—A leading Texas variety, said by T. V. Munson to be "Earliest, medium-sized, good, and prolific."

Newcastle.—Size medium, roundish oblate, with flattened apex; color deep yellow, usually with red cheek; cavity deep and wide; suture indistinct. Flesh deep yellow, tender, sweet, juicy; freestone; quality very good. A leading commercial variety in California and Arizona.

Orange.—Size medium, roundish, hollowed at stem insertion; color orange, with some red in sun; suture distinct. Flesh dark yellow and juicy if ripened indoors like a pear; pit not wholly free. Grown on the west coast and in Utah. Arizona and Texas. Europe.

Oullins Early Peach.—Much like the Peach Apricot in size and shape, but three to four weeks earlier in ripening. In California it is

also said to be better in quality than the Peach. The tree is also a better bearer in Arizona and on the west coast.

Peach.—Very large, the largest grown in the States, roundish, flattened, compressed at sides; color yellow, with brownish yellow in sun. Flesh yellow, juicy, rich, high-flavored. Commercial in Utah and South California. About the most profitable variety grown on the west coast. Italy.

Prieb.—Medium to small, roundish oval; color light yellow; cavity wide and deep; suture shallow, deepening at ends. Flesh yellowish-white, firm, sweet; freestone; quality very good. Grown in Texas and in several States.

Roman (*Turkish of New York*).—Size medium, oval, compressed; color orange-yellow; suture obscure. Flesh fine-grained, quite juicy, good. Season, medium early. A leading variety in Western New York.

Routier Peach.—Large, roundish; color deep orange, mottled or splashed with red in the sun. Flesh juicy, rich, and high-flavored; blooms later than the peach. Popular in Utah, Colorado, Texas, and California; originated in California.

Royal.—Large, roundish oval, compressed at apex; color pale orange, with faintly tinged red cheek; cavity quite wide and deep; suture shallow. Flesh light yellow, juicy, sweet, firm, and rich in flavor; quality nearly best. Starred in several States. Prof. Wickson says, "The leading variety in California."

St. Ambroise.—Size large to very large, ovate, and compressed; color pale orange, with red in the sun; cavity shallow and narrow, with distinct suture. Flesh yellow, firm, sweet; quality nearly best; freestone. One of the earliest to ripen in New York. In California grown mainly for shipping to Eastern markets.

Shense.—Large, often two inches in diameter, roundish; color yellow, with rich blush on sunny side; cavity narrow, shallow; suture very distinct. Flesh pale yellow, juicy, sweet, very good; stone free; kernel bitter. This is the hardiest variety yet tested in Iowa. Grown at Ames, Iowa, by the writer from a pit received from Northwest China. Has also been propagated under the name of "Acme."

Skobeloff.—Rather small, roundish oblate, with flattened apex; color yellow, with reddish cheek; cavity deep and wide; suture distinct. Flesh yellow, not very juicy, sweet, good. An Asiatic variety, grown South.

Spark Mammoth.—Larger than Moorpark, roundish; color pale

yellow. Flesh tender, juicy, sweet. A popular California variety now distributed in Arizona, New Mexico, and Southwest Texas.

Superb.—Medium, roundish oval; surface smooth; color light salmon, with numerous dots of red or russet; down short; cavity medium to large, regular, flaring; suture distinct. Flesh yellow, firm, subacid, good; freestone. Kansas.



Shense.

Sunrise.—Medium in size, roundish oval; color orange-yellow, with velvety surface; dots very small; cavity medium, regular, and shaded with pink; suture shallow. Flesh bright yellow, meaty, tender, juicy, good. Russia.

Wyandotte Chief.—Medium to large, roundish; color yellow, with blush on sunny side. Flesh nearly best in quality. Season, as early as Alexander. Grown in Ohio quite largely.

Yolo.—Very large, roundish oval; surface velvety; color pale yellow, with golden on sunny side, with russet dots; cavity large, regular, abrupt, and deep; suture deep at cavity. Flesh yellow, meaty, sweet, very good. California.

THE PEACH.

The history, propagation, orchard culture, pruning, laying down in colder climates, and other facts in regard to this important commercial and home fruit are given in Part I (see index).

The varieties of the Peach are very numerous and they all belong to one species (*Prunus Persica*). Nearly all the varieties grown in the Middle States and on the west coast are of the Persian type. But in the extreme South it has been found that the Chinese varieties succeed best, as they are less troubled with root-knot, and are not as liable to start the fruit-buds and foliage to be caught by early spring frosts. Another type of peach grown in the extreme South is the native race, usually referred to as the Indian peaches. These are supposed to have been introduced by the early Spanish settlers. The varieties of this race are hardy and not as liable to be injured by frost in the blossoming period. An attempt has been made by Prof. Price, of Texas, to divide the cultivated varieties of the United States into five groups. But any attempt of this character is attended with difficulties as with the plums, and the adaptation of varieties to the various peach belts of the Union must be by actual test of relative hardiness, fruitfulness, and quality.

LEADING VARIETIES OF THE PEACH.

Admiral (*Admiral Dewey*).—Large, roundish; color yellow, with red and crimson cheek. Flesh yellow to the pit, quality very good; pit free. Regarded superior to the Triumph as a shipping variety in Maryland. Season of Triumph in Georgia.

Albright.—Medium to large, roundish, somewhat pointed; color creamy white, sometimes blushed; cavity narrow and deep; suture slight, extending beyond apex. Flesh creamy white, sometimes with slight red at pit, tender, vinous, good; pit free. Grown in the Southeast, but does well farther North. North Carolina.

Allen.—Medium to large, roundish ovate; color yellow, with brownish-red cheek and quite heavy pubescence; cavity deep and narrow; suture slight and two-thirds around. Flesh light yellow, juicy, tender; pit free. Season, early September. Missouri.

Alexander.—Medium in size; skin light-colored with shading and

mottling of red. Flesh white, meaty, juicy, sweet; pit nearly free. Season, last of July. Grown for early market. Illinois.

Alexandra (*Alexandra Noblesse*).—Large to very large, roundish; color pale with clusters of red dots on cheek and rough pubescence; suture deep. Flesh white, tender, melting, vinous; pit free. England.



Admiral Dewey.

Allen.—Medium, roundish ovate; color yellow with brownish-red cheek and considerable pubescence; cavity narrow and deep; suture a line two-thirds around. Flesh light yellow, tender, good; pit free. An old variety of Massachusetts yet grown east of the lakes.

Amelia.—Large, roundish, narrowing to apex; color creamy white with red cheek; suture extends beyond apex. Flesh creamy white with bright red at pit, mild, tender, pleasant-flavored; pit free. A Carolina variety doing well in Michigan and the Southeast.

Amsden.—Medium, roundish, conic; color greenish white, with purple cheek; suture extending to apex. Flesh pale greenish, vinous, pleasant; stone not free. Much like Alexander. Season, last of July.

Angel.—Small, roundish; color pale yellow sprinkled with red

and usually with a red cheek. Flesh white with some red at the pit; quality good; pit free. A seedling of Peen-to, quite popular in Texas and the South. Florida.

Arkansas (*Arkansas Traveller*).—Medium, roundish; color creamy white, nearly covered with red of varied shades. Flesh juicy, sweet; pit nearly free. Commercial on account of its earliness and its superiority to Amsden. Arkansas.

Baldwin Late.—Large, oblong, with decided raise at apex; color greenish white with blushed cheek. Flesh firm, juicy, melting, good; pit free. An Alabama variety much grown in the Southwest.

Barnard (*Barnard's Early, Yellow Barnard*).—Medium to large, roundish; color yellowish white, with purplish-red cheek. Flesh yellow, with red at pit, rich, juicy, very good. A seedling of Yellow Alberge, which it much excels in tree, bearing, and fruit as grown South.

Beatrice (*Early Beatrice*).—Small to medium, roundish oblong; color light with marbled red cheek. Flesh juicy, melting, good; pit free. A handsome small fruit that ships and sells well, but if not thinned it runs too small.

Beers Smock.—Medium to large, round; color creamy white with dark-red blush; cavity quite deep; suture distinct. Flesh quite juicy, yellow, with red at pit, tender, rich; quality good; pit free. Commercial. New Jersey.

Belle Favorite.—Large, oval, narrowing toward apex; color yellow with dull-red cheek; cavity quite deep; suture distinct, two-thirds around. Flesh yellow, tender, vinous, good; pit nearly free. Does well east of Lake Michigan.

Bergen Yellow.—Very large, round, somewhat oblate; color deep yellow with bright-red cheek; suture passes beyond apex. Flesh yellow, rich, nearly best; pit free. A very popular yellow-fleshed commercial variety. New York.

Bequett Cling.—Medium to large, round, somewhat elongated; color creamy white, washed and marbled with red; suture half around. Flesh white with red at pit, tender, juicy, pleasant, good. Texas.

Bequett Free.—Medium to large, roundish oblong; color creamy white covered largely with dull-red and pink dots, surface velvety; suture extends beyond apex, where it is deepest; cavity large, abrupt, and deep. Flesh white with red at pit, melting, sprightly, good; pit free. Extensively grown. Texas.

Bilyeu (*Bilyeu's Late October*).—Large, roundish; color greenish white with red cheek. Flesh white, firm, sweet, good; pit free. A very valuable shipping and canning variety on the west coast and in the States where the season permits its ripening. Maryland.

Bishop.—Medium to large, round; color creamy white with rich dark-red blush; cavity quite deep; suture distinct, extending to apex. Flesh white, juicy, vinous, tender, very good; pit free. Season, August in Michigan.

Bidwell (*General Bidwell*).—Large to very large, round; color yellow with red cheek. Flesh very solid, juicy, rich; pit free and very small. Season, earlier than Salway, but later than Late Crawford. Originated on the west coast, but has proven very valuable where tested in the peach belt.

Bidwell Early.—Medium, oval; color yellowish white, washed with carmine. Flesh greenish white; quality good; pit not free. Said to have come from a pit of the Chinese Peen-to. Florida.

Bidwell Late.—Medium to large, oval; color white with shades of marbled red. Flesh greenish white; quality very good; cling. Florida.

Blood Cling.—Large to very large, roundish oval; color dark, dull, clouded red; suture distinct. Flesh deep red, firm, juicy, but flavor very poor. Use, kitchen, and as a curiosity in market on account of its blood-red flesh.

Bokhara No. 3.—Large; color yellow with red cheek. Flesh yellow, firm yet melting, rich; pit free. Grown by the writer from pits received from Bokhara in North Central Asia. Popular in Georgia, and the hardiest variety in Iowa.

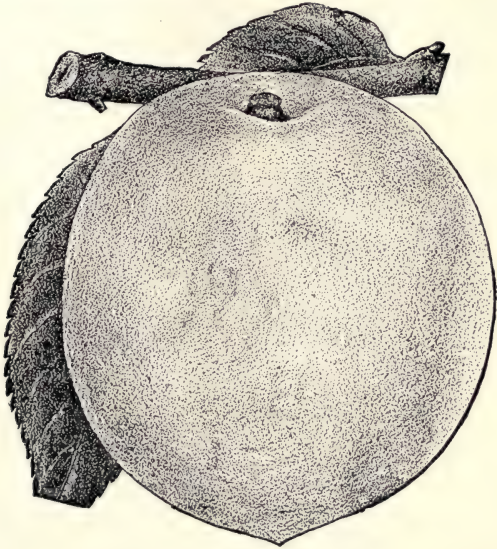
Bokhara No. 1.—Medium to large, ovate; color creamy yellow splashed with red. Flesh yellow with red at the pit, subacid, melting, very good; pit free; glands many, reniform. A very hardy tree with same history as No. 3.

Bonanza.—Medium to large, roundish ovate; color yellow with red cheek; cavity broad and deep; suture slight, extending beyond apex. Flesh yellow with red at pit, vinous, pleasant; pit free. This meets a shipping want, as it is fifteen days later than Salway in Georgia and a fine freestone.

Boyle.—Medium to large, roundish ovate; color yellow with cheek blushed pale red; cavity broad and deep; suture slight, extending beyond apex. Flesh yellow with red at pit, vinous, tender.

pleasant, good; pit free. Does well in Michigan and east of lakes.

Brandywine.—Quite large, flattened ovate; compressed near the suture; color yellow, striped and marbled with red; cavity abrupt, wide, and deep. Flesh yellowish with red at pit, not very rich; quality good; pit free. Season, last of September. Delaware.



Bokhara No. 3.

Brevoort.—Medium to large, round, slightly oblate; color whitish with bright-red cheek; suture deep at apex. Flesh light color with some red at pit, rich, sweet, good; pit free. New York.

Briggs (*Briggs's Red May*).—Medium to large, round; color white with rich red cheek. Flesh greenish white, melting, juicy, rich, very good; pit partially free. Season, early. A California variety now grown quite extensively in the South. A spurious variety with

yellow flesh has been propagated in Michigan under the name of Briggs.

Brigdon (*Garfield*).—Medium, roundish oval; color creamy yellow with red cheek; suture in depression. Flesh yellow, very juicy, vinous, rich; pit free. Commercial. New York.

Brown.—Medium, round; color yellowish white, with dull red cheek; suture depressed, extending to apex. Flesh yellowish white with some red at pit, mild, vinous, good; pit free. Season, August. Tree unusually hardy and one of the best of the season in Michigan and Western New York.

Brunson.—Large, roundish ovate, somewhat compressed; color yellow with faint blush of cheek; suture distinct, extending to apex. Flesh yellow with red at pit, vinous, sprightly, good; pit free. Much like Kalamazoo, but a better tree and a better bearer.

Butler Late.—Large to very large; color greenish white with red cheek. Flesh white, firm, very good; pit free. Season comes in after Smock and meets a shipping want in the Southwest. Virginia.

Carman.—Large, broadly oval, pointed; color white dotted, splashed, and flushed with shades of red. Flesh creamy white tinged with red, vinous, sprightly, good. Claimed to have the same origin as Elberta. Season, early.

Chairs (*Chairs's Choice*).—Large, oval to roundish, tapering to apex; color pale yellow with some blush, and is quite pubescent; suture extends beyond apex; cavity narrow and deep. Flesh yellow, quite acid, red at pit; pit free. Season, early October. Commercial. Maryland.

Champion.—Large, round, nearly regular; color yellowish white, mottled with red on sunny side; suture extends two-thirds around. Flesh whitish with red at the pit; pit free; quality nearly best. Illinois.

Chili (*Hill's Chili*).—Medium in size, roundish oval, compressed; color yellow marbled with red on sunny side; suture distinct, with one side elevated. Flesh yellow with red at pit, mild almost sweet, not very juicy, good; pit free. Mainly grown for market. New York.

Chinese Cling.—Large, roundish, somewhat elongated; color pale yellow; suture half around. Flesh white with red at pit, tender, vinous, with trace of peach-bitter; cling. Delaware.

Christiana.—Large, oblong; color yellow with rich red cheek. Flesh yellow, juicy, sweet, very good; pit free. This ripens in the

South between Late Crawford and Smock, which gives it a shipping status. Season, September in Georgia.

Cobbler (*Yellow Cobbler*).—Large, yellow, much resembling Salway, but considerably later in season. Flesh is nearly best in quality and recommended for all uses, including drying, canning, and marketing; pit free. A leading variety in Texas and grown as far north as Ohio. Texas.

Columbia.—Medium to large, roundish, somewhat elongated; color yellow, about all covered with marbling and striping of red; quite pubescent; cavity broad and deep; suture half around. Flesh yellow with red near surface and at the pit, mild; quality scarcely good; pit free. Considerably grown for market. Georgia.

Cooledge (*Cooledge Favorite*).—Large, roundish; color white with crimson mottled cheek; suture only distinct near the cavity. Flesh melting, juicy, rich, sweet, very good. Massachusetts.

Conkling.—Large, roundish, slightly ovate, and compressed; color bright yellow marbled with crimson and with bright red cheek; suture extends to apex. Flesh whitish with red at the pit; pit free. Flesh juicy, vinous; quality very good. Season, late. Commercial.

Connett (*Connett's Early*).—Large, roundish oval, compressed; color creamy white mottled and traced with red; cavity deep, abrupt, narrow; suture extends beyond the apex. Flesh yellowish white without red, tender, luscious; quality good to very good; pit not free. A seedling of Chinese Cling. North Carolina.

Cox (*Cox's Cling*).—Large, roundish, color greenish white with some blush on sunny side. Flesh greenish white, juicy, luscious; quality very good; cling. Texas.

Crimson Beauty.—Very large, roundish; color yellow with over one-half covered with bright crimson. Flesh white with some red at pit, which is adherent. In Texas it is largely grown for market and canning, and it is prized as far north as Ohio.

Crosby.—Medium to large, roundish; color yellow with mottling of red, red cheek, and some bloom; cavity narrow and deep; suture two-thirds around the fruit. Flesh yellow, juicy, quite firm; quality very good; pit free. Season, middle of September. Massachusetts.

Crothers.—Medium, round to roundish oval; color yellowish white; with bright red blush and some bloom; suture extends beyond apex,

which is somewhat elevated. Flesh yellowish white, with red at pit, tender, vinous, pleasant, good; pit free. Season late.

Denton.—Large, oblong oval; color yellow, with red cheek; cavity wide and quite deep. Flesh yellow, firm, good. One week later than Elberta, which it much resembles in tree and fruit. Maryland.

Druid Hill.—Large, roundish; color greenish white, with red cheek; cavity narrow; suture slight, hardly extending to apex. Flesh whitish, with purple at pit, juicy, rich, very good; pit free. Baltimore.

Early Belle (Hieley).—Large, roundish; color creamy white, with red and crimson cheek. Flesh creamy white, firm, juicy; pit free. A seedling of Belle of Georgia, which ripens its fruit one month earlier than its parent. Georgia.



Early Crawford.

Early Crawford.—Large, roundish, somewhat elongated; color bright yellow, with red cheek and some bloom; in many cases the yellow surface is sprinkled with red specks and the line of suture is compressed; suture extends two-thirds around; cavity broad but

shallow. Flesh yellow, juicy, sweet, and colored at pit; quality very good; pit free. Widely grown on lands not specially subject to spring frosts. New Jersey.

Early Michigan (*Husted* No. 15).—Medium, roundish; color greenish white, with crimson cheek and velvety surface; dots pink; cavity large, abrupt, deep; suture extends somewhat beyond apex, and is deep at cavity. Flesh greenish white, with red at pit, tender, subacid, good; pit free. Season, early. Georgia.

Early Purple.—Large, ovate, irregular; color bright red, downy; cavity quite deep. Flesh greenish white, tender, melting, sweet; pit nearly free. A favorite in Southern Ontario and Western New York. Season, very early.

Early Silver.—Very large, roundish oval, somewhat compressed; color creamy yellow, with marbled blush of cheek; cavity narrow and deep; suture extends somewhat beyond apex. Flesh white, juicy, melting, sweet, rich; pit free. Season, last of August. England.

Early York (*Large Early York*).—Large, roundish, often ovate; color light, with pale red dots and bright red cheek; suture a mere line. Flesh greenish white, tender, melting, good; pit free. Grown across the continent. Honest John of Ohio said to be identical.

Eaton (*Eaton's Golden*).—Medium to large, roundish; color bright yellow, with pink spots at the base. Flesh yellow, sweet, with a decided apricot flavor; cling. North Carolina.

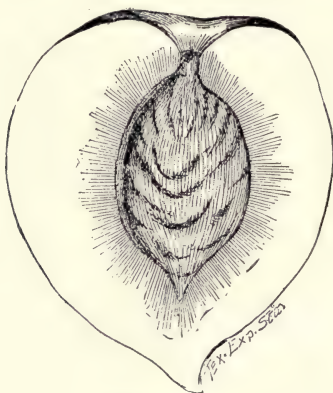
Ede (*Captain Ede*).—Large, roundish oval; color pale yellow, with dull red cheek and some bloom; cavity narrow and deep; suture extends beyond the apex. Flesh yellow, with red at pit, tender, vinous; pit free. Ripens earlier than Elberta. Illinois.

Elberta.—Medium to large, roundish oval, somewhat compressed; color yellow with red cheek; suture more than half around. Flesh yellow with red at the pit, tender, juicy; free from the pit, good. Grown commercially in the East and Southeast. Georgia.

Eldred Cling.—Medium to large, roundish ovate, enlarged on one side; color creamy white, blushed, with some bloom; cavity narrow and deep; suture extends beyond apex. Flesh juicy, creamy white, quite firm, very good. Grown in Ohio and over the Southeastern States quite generally for a new variety.

Emma.—Large to very large, roundish conic; color golden yellow, with red cheek. Flesh fine-grained, firm, juicy, richly flavored, very

good; pit free. Commercial in the Southwest. Better than Elberta as grown in Georgia. Georgia.



Elberta (Reduced),

Emperor.—Large, yellow, with red cheek. Flesh yellow, firm; luscious, good; pit free. Season, October in New Jersey. A seedling of Late Crawford, largely taking the place of its parent.

Everbearing.—Large, oblong, tapering to apex; color creamy white, mottled and striped with pink veins. Flesh white, with red veins near the skin, juicy, vinous, good; pit free. It will not be profitable for market as it has ripe and green fruit at same time for a long period. Georgia.

Family Favorite.—Large, roundish, inclined to oblong; color golden-yellow, with waxen complexion and blushed cheek; suture shallow. Flesh yellow, with red streaks near the pit, firm, juicy, with high aromatic flavor; cling. A seedling of Chinese Cling of far better color than the parent. Commercial in the Southeast. Texas.

Fitzgerald.—Large, oval; color yellow, shaded with crimson and red. Flesh yellow, with red at the pit, firm, yet juicy, and good; pit small and free; quality very good. Rapidly coming into favor. Canada.

Ford.—Large, roundish; color yellow with red cheek and thin bloom; suture extended beyond apex. Flesh yellow with red at pit, firm, nearly sweet, vinous, good; pit free. Season, last of August.

Ford Late (*Ford's No. 3*).—Large, roundish; color greenish yellow with thin bloom; cavity narrow and quite deep; suture obscure. Flesh white with tinge of red at pit, tender, vinous, flavor not high; pit free. Grown in Ohio for market.



Family Favorite.

Foster.—Large, roundish; color bright yellow shaded with dark red; suture slight in compression, extending two-thirds around. Flesh bright yellow, slightly red at pit, juicy, vinous, tender—much like Early Crawford, but better in quality; pit free. Grown in Ohio and eastward. Massachusetts.

Fox (*Fox's Seedling*).—Medium in size, oval, irregular; color creamy white with bright red cheek; suture extends nearly around. Flesh white with red at pit, mild, vinous, rich; pit free; quality nearly best. New Jersey.

Frances.—Large, roundish oval, surface smooth; color yellow almost covered with bright red; cavity quite deep; suture deep

toward the cavity; apex pointed. Flesh yellow, solid, juicy, rather rich-flavored; pit free. Season follows Elberta. Ohio.



Frances (Reduced).

Geary (*Hold on*).—Large, roundish ovate; color light yellow with blushed cheek; cavity broad; suture extends beyond apex. Flesh yellow with red at pit, quite firm, sprightly, vinous, but not very juicy; pit free. Season, early October. Commercial in Maryland, and it does well in Michigan and Ohio.

General Lee.—Medium to large, oblong; color creamy white with crimson shades and splashes. Flesh whitish, melting, juicy, very good; pit not free. Southern planters say that it is an improved Chinese Cling. Commercial.

George the Fourth.—Large, roundish; color white or yellowish white dotted with bright red, with dark-red cheek; suture deep and broad with enlargement on one side; pit free. Flesh pale with red at the small pit, melting, rich, luscious, very good. A very popular home variety, and extensively grown in California. New York.

Georgia (*Belle of Georgia*).—Large, roundish, oblate; color whitish with red cheek. Flesh white, firm; good to very good; pit free. A seedling of Chinese Cling grown for market. Georgia.

Globe.—Very large, roundish ovate; color yellow with light-red cheek and some bloom; cavity broad and deep; suture two-thirds

around. Flesh yellow, mild vinous, tender; pit free; quality very good. A standard market variety. Pennsylvania.

Gold Drop (*Golden Drop*).—Medium, roundish ovate; color rich yellow or, as it grows in the South, “a sort of transparent golden-yellow,” often with blushed cheek; cavity broad, shallow; suture obscure except near apex. Flesh yellow, vinous, almost sweet, good; pit free. Attractive in market.

Goode (*Goode's October*).—Large, roundish oblong; color white, splashed and veined with red, and quite downy. Flesh white with red at pit, juicy, vinous, good. Grown mainly in the South. South Carolina.

Greensboro.—Medium to large, round; color yellow with red and crimson cheek. Flesh white, very juicy, good. A North Carolina variety larger than Alexander and earlier in season. North Carolina.

Haines Early.—Large, roundish, flattened at top; color light with deep-red cheek; suture well marked, extending round the fruit with sides very unequal. Flesh greenish white, juicy, melting, sweet, good. New Jersey.

Hale.—Medium round; color creamy white with red cheek and light bloom; cavity abrupt and quite deep; suture extends to apex. Flesh creamy white, tender, sprightly; pit half free; good. Grown commercially. Ohio.

Hance (*Hance's Golden*).—Medium to large, roundish; color yellow with dark-red cheek and considerable bloom; suture obscure except near apex; cavity broad. Flesh yellow with red at pit, tender, vinous, good; pit free. Season, early.

Heath (*Heath's Cling*).—Very large, oblong, narrowed at both ends with decided point at the top; color yellowish white with red cheek in interior climates; suture distinct, extending to apex. Flesh greenish white, tender, melting; quality nearly best; pit not free. Maryland.

Holder (*Holderbaum*).—Very large, roundish; color creamy yellow with crimson cheek. Flesh creamy yellow streaked with red to the pit, quite firm, luscious; pit free. Tree hardy and profitable in Maryland.

Honey.—Medium to small, oval to oblong, pointed; color whitish mottled with carmine. Flesh yellow with red at the pit; good to very good. Widely grown as a home fruit on account of its remarkable sweetness. It has varied by seedling production from the

Honey of Downing grown from Chinese seed. One of the best far South.

Husted (*Husted's No. 16*).—Medium roundish; color greenish white with crimson cheek; dots pink with downy surface; cavity deep regular; suture extends beyond apex, deepest at cavity. Flesh greenish white with yellow veins, fine-grained, subacid, good; pit free. Georgia.

Hyatt.—Medium to large, roundish; color creamy white covered with two shades of red in the sun, with thin bloom; suture extends beyond apex. Flesh creamy white, quite firm, vinous, good; pit free when fully ripe. Season, early.

Hynes (*Hynes's Surprise*).—Medium, roundish; color creamy white with mottling and stripes of red, and some bloom; suture extending to sunken apex. Flesh creamy white, sprightly, vinous, pleasant; pit half free. Season, early August.

Ingold (*Lady Ingold*).—Medium to large, roundish; color creamy yellow, quite well covered with bright red. Flesh yellow, quite firm, vinous; pit free; quality very good. Leading shipping variety of Tennessee and Georgia. Tennessee.

Japan Dwarf Blood.—Medium roundish; color yellow, mostly overspread with crimson. Flesh streaked with red; juicy, rich, very good. A new variety from Japan of dwarf habit, often bearing when two years old. Season, earlier than Alexander.

Jaques (*Jaques's Rareripe*).—Large, roundish, flattened; color yellow, shaded with red of varied hues; suture distinct, with one side largest. Flesh yellow with red at pit, juicy, subacid, good; pit free. Massachusetts.

Kalamazoo.—Medium to large, oval; color yellow washed and striped with red, and thin bloom; suture usually depressed and extending beyond apex. Flesh yellow with red at pit, vinous, quite rich; quality good; pit free. Highly valued in Michigan and New York. Michigan.

Kenricks Heath (*Heath's Free*).—Very large, oblong; color greenish white with purplish-red cheek; suture slight with small swollen projection at top. Flesh greenish white with red at the pit, somewhat coarse but melting, juicy, with pleasant flavor; pit free. New England.

Keyport (*Keyport White*).—Large, roundish oval; color white with red cheek. Flesh white, tender; quality good; pit free. New Jersey.

Late Admirable.—Large, roundish or oval, with deep suture nearly around, and decided point at apex; color light yellowish green with red cheek, often marbled with darker red or crimson. Flesh greenish white with red at the pit, juicy, melting; quality very good; pit free. A French variety commercial in Delaware and the south-eastern States.

Late Barnard.—Medium to large, roundish oval; color yellow with dark red cheek and bloom; cavity narrow and quite deep; suture extends beyond apex. Flesh bright yellow, with red at the pit, firm, rich, pleasant, good; pit free.

Late Crawford (*Late Crawford*).—Large, roundish oval; color yellow with red cheek. Flesh yellow with red at the pit, melting, vinous, very good; pit free. Grown across the continent. New Jersey.

Lee (*General Lee*).—Large, roundish oblong; color creamy white, with crimson and red streaks and splashes. Flesh whitish, melting, juicy, rich; pit not free. This is an improved Chinese Cling, rapidly taking the place of that old variety in the South.

Lemon Cling.—Large, oblong, narrowed at the top with projecting enlarged point like a lemon; color yellow, with brownish red cheek. Flesh yellow, with red at the pit, vinous, subacid, very good; pit not free. South Carolina.

Lemon Free.—Large, roundish ovate, often with pointed apex; color light yellow, with greenish white tinge and thick bloom; cavity quite deep; suture not distinct, but flesh at one side elevated. Flesh yellow, tender, somewhat dry, good; pit free. Grown mainly for canning. Ohio.

Levy Late. (*Henrietta*).—Very large, roundish, somewhat depressed; color bright yellow, with crimson cheek; cavity medium, deep. Flesh yellow, quite firm, sweet, vinous, very good; pit not free. An old variety, popular in Southwestern States. District of Columbia.

Lewis.—Medium to large, round; color yellowish white, over-spread with mottling and areas of red and thin bloom; suture in depressed channel extending to apex. Flesh yellowish white, with red at the pit, tender, vinous; quality good; pit free. Highly prized for commercial planting. Michigan.

Lolo (*Miss Lolo*).—Above medium in size, roundish conical, with prominent point at the apex; color creamy white, washed and mottled with red next the sun, with pink dots and velvety surface of short loose down; cavity abrupt, deep, and regular, with short stout stem;

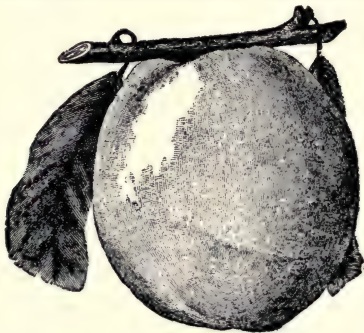
suture extends to apex and is deep at upper end. Flesh whitish, with red at pit; subacid, melting, very good; pit free. Popular South. Texas.

Longhurst.—Medium to large, oval; color yellow, with slightly blushed cheek and some bloom; suture has enlargement on one side but the line is obscure; apex prominent. Flesh yellow, with red at pit, tender, vinous, sprightly, and with quite rich flavor; pit free. The fruit buds of this variety have proven hardier than usual in Canada and Michigan.

Lord Palmerston.—Very large; color creamy white, with pink cheek. Flesh stained at pit, firm, juicy, rich; pit nearly free. Season, quite late. Commercial in southeastern States.

Lorentz.—Medium to large, roundish, enlarged at one side of suture; color yellow, with red cheek and some bloom; cavity narrow and deep; suture slight, extending beyond apex. Flesh yellow, with red at pit, tender, vinous, pleasant; pit free. Season follows Smock. Widely planted in the South. South Carolina.

Louise (*Early Louise*).—Medium, round; color red, with bright red or crimson cheek; suture deep. Flesh yellowish white to the pit, melting, tender, good; pit nearly free. Commercial in Kentucky.



Lovett, (Reduced).

Lovell.—Medium, roundish, compressed; color bright yellow, with marbled blush and thin bloom; cavity narrow and deep; suture extends to apex. Flesh yellow, tender, vinous, very good; pit free. Mostly grown on west coast but does well in Michigan. California.

Lovett (*Lovett's White*).—Large to very large, roundish; color

creamy white, with considerable bloom; cavity narrow but shallow; suture extends beyond apex. Flesh creamy white to the pit, tender; and quite rich; pit free. A popular white variety east of lakes and South.

Magdala.—Medium, roundish; color creamy white, marbled and blotched with crimson; suture slight. Flesh yellowish white, with some red at pit, juicy, firm, sprightly, rich; pit not free. An old English variety considerably grown in the southeastern States.

Mamie Ross.—Medium to large, roundish oval, white, with rich blushed cheek. Flesh yellowish white, rich, high-flavored; pit nearly free; of Chinese type, larger and better than Early Rivers, ripening at same time. Texas.

Marshall.—Large, roundish, somewhat oblong; color pale yellow, with mottling of red and thin bloom; cavity narrow and deep; suture two-thirds around. Flesh yellow, with much red at pit, quite firm, somewhat acid, good; pit free. Popular in Ohio and around the lakes.

Mary Choice.—Large to very large, oblong; color yellow, with red cheek. Flesh yellow, firm, rich, very good; pit free. Grown for dessert and market in New Jersey, and Maryland, and is a favorite in California. New Jersey.

Mathews.—Large, roundish; color golden yellow, with red streaks and crimson cheek. Flesh yellow, firm, juicy; pit free. Season, three weeks later than Elberta in Georgia. Said to be a cross between Elberta and Smock. Becoming commercial in Maryland.

McCollister.—Medium to large, oval, or roundish ovate; color yellow, with bright red cheek and much bloom; cavity broad and deep; suture distinct, extending to apex. Flesh yellow, with red at pit, tender, sprightly, vinous; pit free. Widely grown for market. Ripens with Smock.

McIntosh.—Large, roundish; color creamy white, with red and crimson cheek. Flesh creamy white, quite firm, luscious; pit nearly free. Ripens in Maryland, between Triumph and Elberta, and is widely planted.

Miller Cling.—Large to very large; color golden yellow, flushed with carmine. Flesh yellow, firm, sweet. A remarkable keeper and shipper, considerably grown in the Southwest.

Minnie (*Alton, incorrectly*).—Large, roundish; color creamy white, with dappled red cheek; cavity broad and shallow; suture distinct, deepest near cavity, terminating at apex. Flesh creamy white, with

red at the pit, quite firm, vinous; pit free; quality good. A profitable variety in Texas and the South, and it does well in Michigan. Texas.

Mountain Rose.—Large, roundish, tapering toward the apex; color creamy white, blushed and sprinkled with red spots; suture in slight depression extending beyond the apex; cavity abrupt and deep. Flesh creamy white, with red at the pit, tender, melting, very good; pit free. An amateur home variety mainly, but grown across the continent. New Jersey.

Morris White (*White Rareripe*).—Large, roundish or roundish oval; color creamy white, often with colored cheek; suture extends to small swollen apex. Flesh white, quite firm, melting, rich in flavor; pit free. An old variety, yet planted widely.

Mrs. Brett.—Large, roundish; color yellowish white, with bright red cheek; suture broad and shallow, extending somewhat beyond apex. Flesh white, with red at pit, juicy, melting, sweet, rich; pit free. Earlier than Oldmixon Free and superior to it in color and quality. Commercial. New York.

Muir.—Large, roundish, oval, somewhat compressed; color yellow, with reddish cheek and splashes of red and crimson; cavity broad and quite deep; suture extends to apex. Flesh yellow, tender, sprightly; pit free. A cosmopolitan variety, doing well over the peach sections of the Union. In California Prof. Wickson says: "A good shipper and canner, and peculiarly adapted to drying because of exceptional sweetness and density of flesh; yielding one pound dry from less than five pounds fresh." California.

Nectarine.—Large, ovate, pointed at apex; color pale yellow, with faint red and marbled cheek; pubescence very slight; suture obscure. Flesh white, with red at pit, juicy, vinous, rich, very good; pit free. England.

Newhall.—Very large, roundish; color yellow, with dark red cheek. Flesh deep yellow, juicy, with rich vinous flavor; pit free. Originated in California, but it has proven a success in the southwestern States east of the mountains, and where tested in New Jersey.

New Prolific.—Large, roundish oval; color yellow, with bright red cheek and bloom; cavity narrow and deep; suture deep, extending beyond apex. Flesh yellow, with some red at pit, firm, delicate, sprightly, vinous, very good; pit free. This has a high position as a shipper in Ohio and the East generally.

Niagara.—A variety grown in Western New York, supposed to be

a seedling of Early Crawford, which is larger in size; quite as productive and ripens later than its parent; pit free. Fruit large, yellow, freestone, and excellent in quality. Now grown commercially.

Oldmixon Cling.—Large, roundish oval; color yellowish white, dotted with red and often with red cheek. Flesh juicy, rich, with best flavor. Widely grown as one of the best of the clingstone varieties.

Oldmixon Cling.—Medium to large, roundish, somewhat oval, with one side largest; color creamy white, marbled with red and with bright red cheek; cavity narrow; suture slight. Flesh creamy white, with red at pit, tender, vinous, very good; pit free. An old variety, yet starred in several States.

Onderdonk.—Medium to large, oblong or oval, flattened, with pointed apex; color lemon yellow. Flesh yellow, slightly acid, good; pit free. A productive variety in Texas and over the Southwest.

Orange Cling.—Large, round; color orange yellow with rich dark red cheek; suture distinct, passing nearly round. Flesh deep yellow, quite firm, juicy, rich, very good; pit not free. An old variety much grown in Colorado and the Southwest.

Pallas.—Medium to large, roundish oval; color greenish yellow, with red blushed cheek; suture distinct to the prominent apex. Flesh creamy white, with red at the pit, very juicy, tender, sweet; pit free. Season, quite early. Extensively grown in the southeastern States. Georgia.

Peen-to (*Chinese Flat*).—Small, flat, deeply indented to the stone at each end; color greenish white, mottled with red. Flesh juicy, rather rich, very good; clingstone. Quite popular in the extreme South for home use and near markets.. China.

Peninsula.—Large, roundish, often oval; color yellow washed with red, with considerable bloom; cavity deep and narrow; suture shallow extending beyond apex. Flesh yellow, with red at pit, quite firm, with vinous sprightly flavor; pit free. Maryland.

Picquet (*Picquet's Late*).—Large, round; color yellow with red cheek; cavity narrow and deep; suture slightly elevated at apex. Flesh yellow, with red at pit, firm, sprightly, good to very good; pit free. Widely grown in the South, and a favorite in California. Georgia.

Princess (*Princess of Wales*).—Large, roundish; color light yellow, with pink around stem; suture obscure. Flesh white, with red at pit,

juicy, tender, vinous, very good; pit free. Does well in New Jersey and Delaware. England.

Prize.—Large, roundish; color yellow, with varied red of cheek and thin bloom; cavity broad and suture slight. Flesh yellow, with red at pit, tender, vinous, very good; pit free. A productive sort in the southeastern States.

Rareripe (*Red Rareripe, Late Rareripe*).—Large, heavy, roundish oval; color grayish yellow, marbled with red and reddish spots, with deep red cheek; suture depressed at the top. Flesh white, with deep red at the pit, melting, with rich flavor; pit free. An old variety yet popular in several States.

Reeves (*Reeves's Favorite*).—Medium to large, roundish, and inclined to ovate; color yellow, with dark red cheek and thin bloom; cavity deep and broad; suture not distinct. Flesh yellow, with red at pit, mild, tender, vinous, good; pit free. Grown in the southeastern States. New Jersey.

Red Cheek (*Red Cheek Melocoton*).—Medium to large, roundish oval, with raised point at apex; color yellow, with bright red cheek and thin bloom; cavity narrow and suture slight, with swelling on one side. Flesh yellow, with red at pit, tender, vinous, good; pit free. An old variety yet starred in several States, and it has given several fine seedlings.

Richmond.—Very large, round; color yellow with red cheek. Flesh yellow, melting, very good; pit free. Planted east of lakes and in Southeast States. New Jersey.

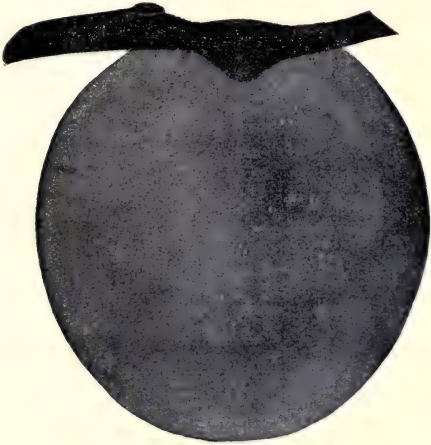
Ringold (*Ringold King*).—Large, roundish, somewhat ovate; color creamy white, with bloom; suture extended beyond the apex; cavity narrow and deep. Flesh white to the pit, tender, rich, sprightly; pit not free. Is taking the place of Heath Cling in Ohio and Michigan as it is superior in tree, bearing, and fruit.

River Bank.—Medium to large, roundish; color greenish yellow, with dark red cheek, and thin bloom; suture extends beyond apex. Flesh yellowish white, fine-grained, pleasant, good; pit partly free. A very hardy variety as tested in Utah and Colorado.

Rivers.—Large, roundish oval, somewhat compressed; color creamy white, often with pink blush and thin bloom; suture faint, extending to apex. Flesh creamy white, fine-grained, vinous, good; pit nearly free. An old English variety yet commercial in the eastern and southeastern States.

Royal George.—Medium to large, roundish, inclining to oblate; color pale white, with red dots and red marbled cheek; suture deep and extending much beyond the apex. Flesh whitish, with red at the pit, melting, juicy, quality nearly best. An old variety from Europe yet starred in several States.

Russell (*Russell*, No. 1).—Large, roundish oblong; color creamy white, with varied shades of red and crimson on the sunny side;



Russell.

cavity broad and shallow; suture slight. Flesh greenish white, streaked with yellow, juicy, melting, vinous, good; pit free. Has proven hardier than Alexander in Nebraska. Nebraska.

Salway.—Large, roundish, somewhat oval, with one side largest; color yellow, with red cheek and bloom; suture slight, extending beyond apex. Flesh yellow, with red at pit, juicy, tender, vinous, good; pit free. An old English variety, commercially planted in several States for late marketing.

St. John (*Yellow St. John*).—Large, round; color yellow, with red cheek. Flesh juicy, sweet, high-flavored; pit free. Season, very

early. Highly prized in the South and on the west coast; originated in New Orleans.

Schumaker.—Large, round. Said to be almost identical with Alexander but with higher color. Season, very early.

Slappey.—Medium, roundish; color bright golden yellow, with red and crimson shades. Flesh yellow, sweet, almost luscious; pit free. The earliest handsome and good peach shipped North from Alabama and Georgia.

Smock.—Large, roundish, inclined to ovate; color yellow, with some blush on cheek and heavy bloom; cavity narrow and deep; suture obscure except near apex which is slightly extended. Flesh yellow, with red at pit, quite tender, and sprightly; quality good; pit free. Commercial. New Jersey.

Sneed.—Medium, roundish oval, compressed; color creamy white, splashed and mottled with bright red, with some bloom; cavity narrow and deep; suture extends beyond the apex. Flesh yellowish white, tender, vinous, good; pit nearly free. Free from rot and ripens very early. Tennessee.

Snow.—Medium, roundish oval, compressed; color yellow, with red cheek and tracings of red, with considerable bloom; suture extends two-thirds around. Flesh yellow, but deep red at pit, tender, sweet, good; pit free. Variety is well established South. Tennessee.

Staley.—Very large, elongated somewhat, and flattened laterally; color rich creamy white, with touches of light red; suture shallow, but extends nearly around; pit small and free. Flesh white to the pit, juicy, tender, very good. Twenty days later than Salway, hence is grown where seasons are long on west coast and in the South.

Stark Heath.—Medium, roundish, somewhat oval; color creamy white, with blushed cheek and some bloom; cavity narrow and deep; suture extends beyond the apex, where it is most distinct. Flesh creamy white, sprightly, vinous, mild; pit not free. At the West the slight bitter at the pit has not been noticed and the tree is hardier than Hill's Chile.

Steadley.—Large to very large, roundish, inclined to ovate; color creamy white, with pink splashing and thin bloom; cavity narrow; suture slight, extending beyond apex. Flesh white to the pit, tender, sprightly, good; pit free. Commercial; one of the best varieties for canning on west coast. Missouri.

Stevens (*Stevens's Rareripe*).—Medium to large, roundish ovate;

color creamy white, with dark red cheek and some bloom; cavity narrow and quite deep; suture slight and extending beyond apex. Flesh yellowish white, with some red at pit, tender, sprightly, good; pit free. A popular late variety. New Jersey.

Strawberry.—Size medium, oval; color a marbling of deep red; cavity deep; suture passing to apex. Flesh whitish, juicy, rich, and delicate. Season, early. This variety originated in New Jersey, but has been neglected, and is now a leading variety for about all parts of California.

Strout Early.—Medium, in shape, much like Alexander, but said to be firmer in flesh, better in quality, a better bearer, and free from rot. Flesh streaked with red; pit free. Indian Territory.

Stump (*Stump the World*).—Medium to large, roundish, somewhat oblong ovate; color creamy white, with bright red cheek and abundant bloom; cavity quite wide and deep; suture shallow, extending a little beyond apex. Flesh white, with some red at pit, quite firm, high-flavored, very good; pit free. New York.

Success.—Large, roundish; color yellow. Flesh quite firm, juicy, rich, good; pit free. Becoming commercial in the South. Texas.

Surpasse (*Surpasse Melocoton*).—Large, round, inclined to ovate; color yellow, with bright red cheek; cavity deep and narrow; suture obscure, extending to apex. Flesh yellow, tender, vinous, sweet, good; pit free. New York.

Susquehanna (*Griffith*).—Large, nearly round; color rich yellow, with glowing red cheek over a large part of the surface; suture extending to apex. Flesh yellow, sweet, juicy, vinous; pit free. Commercial in several States. Pennsylvania.

Switzerland.—Large, roundish; color light yellow, with red in the sun; suture a mere line two-thirds around. Flesh creamy white, with red at the pit, juicy, pleasant; pit free. A shipping variety in Michigan and in the South.

Thurber.—Large, roundish oblate; color creamy white, marbled and splashed with crimson. Flesh juicy, melting, rich; pit free. Commercial South, where it ripens in July and is very productive; specially valuable in the dry southwest States.

Tillotson.—Medium, roundish, color creamy white, with reddish dots, and bright red and crimson in the sun. Flesh creamy white,

with red at the pit, juicy, rich, high-flavored; pit nearly free. Commercial in the South. New York.

Tippecanoe.—Medium to large, roundish, somewhat compressed; color yellow, with red cheek. Flesh yellow, juicy, vinous, good; pit not free. Season quite late. A Pennsylvania variety grown South.

Toledo (*Early Toledo*).—Large, roundish; color yellowish white, streaked and mottled with red; cavity quite large and deep; suture extends beyond the apex. Flesh yellowish white, with red at the pit, tender, sweet, pleasant, good; pit free. An early bearer and hardy tree. Ohio.

Triumph.—Medium to large, globular, flattened; color greenish yellow, with mixed red and broken stripes of purplish red, pink dots, and velvety surface; cavity wide, abrupt, and deep; suture shallow except near cavity, and extends to pointed apex. Flesh yellow, with red stains, juicy, mild, luscious, very good; pit free. Season very early. New, but its culture is extending South.

Troth.—Medium, roundish; color creamy white, with bright red cheek; suture does not extend quite to apex; cavity broad, depth medium. Flesh whitish, dark red at pit, tender, vinous, but not rich; pit free. Season early. Grown east of the lakes. New Jersey.

Tuskena.—Very large, roundish or roundish oval; color yellow, with dark red cheek and bloom; cavity narrow and deep; suture extends past the apex. Flesh yellow, with red at pit, juicy, vinous, rich, very good; pit not free. Mainly grown in Utah and on west coast, but it thrives in the South.

Van Buren (*Dwarf*).—An ornamental dwarf-growing variety, with small flowers, grown in Ohio and over the South in a small way. Fruit medium, round, golden yellow, with a rich carmine cheek; flesh yellow, firm, juicy, sprightly; cling.

Victor.—Medium, roundish. Flesh pleasant, subacid; pit not free. A seedling of Chinese Cling crossed with Spanish Blood, of value on account of its extreme earliness, often maturing its fruit in the South by the middle of May.

Waddell.—Medium to large, oblong; color creamy white, with bright red cheek. Flesh firm, white, rich, and sweet; pit free. An admirable shipper of good quality. Planted largely in Georgia by Mr. Hale and others. Season follows Greensboro and Sneed.

Wager.—Medium, oblong oval, one side often largest; color golden yellow, quite downy; cavity rather narrow; suture extends

to apex. Flesh bright yellow, firm, quite juicy, sweet, slightly vinous, but not rich; pit free. A hardy variety, mainly grown for drying and canning. New York.

Walburton (*Walburton's Admirable*).—Large, roundish; color yellowish green, with crimson mottling and dark red cheek. Flesh yellowish white, with red at pit, melting, juicy, rich; pit free. Quite extensively planted east of lakes. England.

Waldo.—Medium, roundish oblong; color light salmon, with bright red cheek. Flesh yellowish white, with red at the pit, juicy, very sweet, good to very good; pit free. A seedling of Peen-to, much prized in Texas and the far South. Florida.

Walker.—Medium to large, roundish oval; color creamy white, with clear red cheek and light bloom; suture extends to apex. Flesh creamy white, with red at pit, tender, sprightly, good; pit free. Season, quite late. Popular east of the lakes. Delaware.

Ward (*Ward's Late*).—Large, roundish, inclined to oval; color white, with bright crimson cheek. Flesh white, with red at pit, juicy, melting, rich; pit free; very good. An old variety now commercial at several points East and Far West.

Waterloo.—Medium, roundish; color greenish white, with purple red of cheek and pale red mottling in the shade; suture extends beyond the apex. Flesh greenish white, melting, vinous; quality very good; pit partially free. New York.

Wheatland.—Large to very large, roundish; color golden yellow, shaded on cheek with dark red and crimson; suture distinct to the apex. Flesh yellow, with red at the pit, quite firm, juicy, sweet; quality very good; pit free. Widely grown and commercial in Colorado and Utah.

Wonderful.—Large, roundish oval; color yellow, with carmine blush of cheek and some bloom; cavity narrow and deep; suture extends beyond apex. Flesh yellow, with red at pit, quite tender, and high flavored; pit free. New, but growing in popularity at the Southwest for late shipment and home use.

Woolsey.—Large, roundish; color yellow, with red and crimson cheek. Flesh yellow, rich, melting, vinous, good; pit free. A hardy Western variety. Nebraska.

Worrell (*Sallie Worrell*).—Very large, color creamy white, shaded and splashed with pale to deep red. Flesh firm, juicy, delicious; pit free. A promising new variety. North Carolina.

Worth.—Large, yellow, with red cheek. Flesh yellow, quite firm, rather rich; quality good; pit free. Season, somewhat earlier than Elberta. Grown in Missouri. Illinois.

Yellow Alberge (*Alberge Yellow*).—Medium, roundish; color yellow, with purplish red cheek; suture distinct, passing to the apex. Flesh yellow, with deep red at the pit, juicy, sweet, good; pit free. Season, middle of August. France.

Yellow Rareripe.—Medium to large, ovate, compressed; color yellow, with clear red cheek and bloom; suture distinct, extending beyond the apex; cavity narrow. Flesh yellow, with red at pit, tender, and rich-flavored; pit free. Commercial.

Yellow Tuscany (*Dura-cini*).—A very large yellow cling variety, largely planted in South California, and is now considered the best yellow cling yet tested for canning. It ripens with Lemon Cling. So far as tested it is free from leaf curl in California, Arizona, and Southwest Texas.

THE NECTARINE.

This fine fruit may be described simply as a smooth-skinned peach, yet as stated in Section 187 of Part 1 it is an ancient fruit in Central Asia, and it is probable that it was originally a smooth-skinned variety of the peach so fixed in Central Asia that it reproduced the peculiarity from the pits, as the writer saw tons of the dried fruit brought in from Central Asia to the Nishni-Novgorod Fair. But in our day varieties of nectarine have been grown from pits of the Persian race of peaches. The fruit is grown in the middle States and South, but it cannot be said that it is commercial anywhere on a large scale except in California, where the fruit is almost exclusively used for canning and drying. The white-fleshed varieties are mainly used, as they do not color the syrups in canning. The propagation and management in all respects are the same as the peach.

VARIETIES OF NECTARINE.

Boston.—Large, roundish oval; color light yellow, with bright red cheek. Flesh yellow to the stone, which is small and pointed, sweet, with pleasant and peculiar flavor; pit free. This variety was grown from a peach-pit by Mr. T. Lewis, of Boston, and is a favorite in the peach belt across the continent, and even a leading variety in California for dessert use.

Downton.—Large, roundish oval; color pale green, with violet cheek. Flesh pale green, with some red at pit, melting, rich, very good; pit free. An old English variety, grown east of the lakes, in the arid States, and on the west coast.

Early Newington.—Large, roundish ovate, enlarged on one side, with swollen point at apex; color pale green, nearly covered with bright red and thin bloom. Flesh greenish white, with deep red at the pit, juicy, sugary, rich, very good; pit not free. The old English variety, grown in the peach belts across the continent.

Early Violet (*Violet Hative, Aromatic*).—Medium to large, roundish, color pale green, with dark purple cheek and brown dots. Flesh whitish, reddened at pit, melting, rich, high-flavored, aromatic; quality best; pit free. Grown in Western New York, New Jersey, Ohio, and Colorado.

Elruge.—Medium size, roundish oval; color pale green, with deep red cheek and brownish russet dots. Flesh greenish white, with some stain near pit, juicy, rich, high-flavored; pit free. A general favorite in the peach belt west to Colorado and Arizona.

Hardwicke.—Very large, roundish, sometimes oval; color pale green, with red cheek. Flesh greenish, with red at the pit, melting, juicy, rich, high-flavored; pit free. An old English variety, now popular in New Jersey and the southeast and southern States.

Humboldt.—Very large; bright yellow, splashed with crimson. Flesh orange-colored, tender, juicy, high-flavored. Grown in England, from pit of Pineapple Nectarine. Quite widely grown.

Hunt Tawney.—Medium in size, ovate with prominent apex; color pale orange, with bright red cheek. Flesh deep orange, melting, very good; pit free. Season, very early in Ohio and the South.

Late Melting.—Large, roundish; color yellowish green, with dull red cheek. Flesh greenish white, juicy, good. Season, very late. Grown in New York and well over the South.

Lord Napier.—Large, roundish; color pale yellow, with dark red cheek. Flesh white, melting, tender, rich; pit free. A heavy bearer on west coast and quite generally in peach belt. Grown from a pit of the Early Rivers peach in England.

New White (*Large White*).—Large, nearly round; color white, with shades of red. Flesh white, juicy, tender, with rich vinous flavor; pit small and free. A leading variety in California, and double-starred in Utah and parts of Colorado.

Rivers Orange.—Large, roundish ovate; color rich orange, with red cheek. Flesh yellow, rich, highly flavored. A seedling of Pit-maston's Orange nectarine that has taken its place as a hardier tree, better bearer, and richer fruit. Grown in New York and in the peach belt. England.

Roman (Old Roman).—Large, roundish, flattened some at apex; color greenish yellow, with reddish brown cheek. Flesh firm, greenish yellow, with deep red at pit, vinous, high-flavored. A variety popular in Europe since 1629; yet prized in New Jersey and in peach belt generally.

Stanwick.—Large, roundish oval, heart-shaped at base; color light greenish white, with rich violet cheek. Flesh white, tender, juicy, rich, sugary, very good; pit free. Originated in England from pits brought from Central Asia. Grown in peach belt from the Atlantic to the Pacific.

Victoria.—Large, roundish oval; color yellowish green, with red cheek. Flesh white, melting, rich, sugary; quality nearly best. Season, early. Grown east of the lakes and in the South. England.

THE MULBERRY.

The mulberry is one of the most ancient fruits over Central and Eastern Asia and to this day Albert Regel says: "They are considered the most valuable nourishment from the region of Zarafshan eastward to the Amu-Daria. Dried mulberries furnish a sweet food in the country where corn is scarce, and in every household large piles are stored for winter use. In Shugaan a dish full of dried mulberries is used as a unit of measure, and the help of the physician, as well as the skill of the singer is valued at so many dishes of mulberries. A bag full of dried mulberry-meal forms the provision for pedestrians and hunters." It can hardly be said that it is a popular fruit as yet in this country.

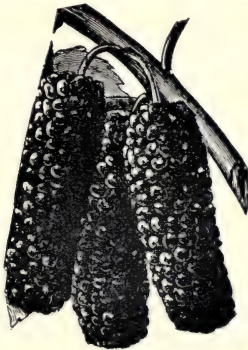
But few varieties are found in our nurseries thought to be worthy of propagation, and some of these, notably the large fruiting varieties of the Southwest, are not hardy at the North. The propagation of late has been by using seedlings of the common Russian varieties by side-grafting at the crown, as practiced with the pear, cherry, and plum (86). Several nurserymen practice spring scion-budding as explained in Section 94 and Fig. 53 of Part I. This work is done just before the

foliage expands on the stocks used, or as soon as the bark slips freely. In spring or summer budding the buds appear to be drowned out by the free flow of milky sap.

VARIETIES.

Black English.—Under this general name a variety is much cultivated in the South. It is a low grower, not exceeding fifteen feet in height, with spreading top and deeply lobed leaves. Fruit one and one-half inches long and nearly an inch in diameter; quality better than any of our American varieties—but not hardy north of the fortieth parallel even on the east coast.

Black Persian.—Large, thick, fleshy, quality very rich and good; extensively grown in California, Arizona, Texas, and the South. It belongs to the *Morus nigra* species of East Europe. In California this variety fruits continually from May until October, and under irrigation it behaves the same in Arizona and Texas.



New American.

Downing.—Large, one and one-quarter inches long and three-quarters of an inch in diameter; color blue black. Flesh juicy, rich, with sprightly flavor. Hardy east of the lakes and south of the forty-first parallel in the West.

Hicks Everbearing.—Much like Downing in size, color, and quality but not as hardy in tree; originated in Kentucky. A variety of the native red species of the South (*Morus rubra*).

Johnson.—Very large, oblong, nearly black in color. Flesh sub-acid, and excellent in quality. The leaves of this variety are very large, and it is a popular shade-tree in southern cities as far south as San Antonio, Texas. Ohio.

Munson.—Large, oblong, black; quality very good, with some acid. A variety of the Russian mulberry, originated by T. V. Munson, of Texas. As Mr. Munson says: "The branches in fruit look like ropes of big berries," as grown in the South. This is hardy farther north than Downing.

New American.—Large, oblong; color black; quality very good. Hardier in Ohio and in the Southeast and South; but tender at the West. It is said that this is often sold under the name of Downing.

Stubbs.—Very large, often two inches long and three-quarters of an inch in diameter; valuable in the South, and it does well under irrigation in southwest Texas. This belongs to the native species of the South (*Morus rubra*).

PERSIMMON (DATE PLUM, KAKI).

Sections 217, 218, and 219, give an outline of the advance within recent years in growing the native and foreign persimmons in this country, and their propagation. In West Europe the climate does not favor the introduction of fruits that need a high summer temperature except under glass. Hogg does not mention it in his "Fruit Manual," and De Candolle does not include it in his origin of cultivated plants, yet for many years the Japan varieties have been cultivated in West Europe under glass, especially the variety *Costata*, which bears a handsome orange yellow fruit the size of large apricots. Burbidge said of its fruits in 1878: "The fruit is delicious, with a flavor like apricots." In the south of France too, in 1882, the writer saw plantations of a Japan species or variety under the name of *Diospyros Mazeli* loaded with medium-sized orange red fruit, which I think is identical with the Mazelli grown in Georgia. The fruits from this source are seen in the market in Paris and Berlin wrapped in tissue-paper like oranges, and meeting with ready sale. In this country, prior to the introduction of the Japan varieties select native ones of our two American species, *Diospyros Virginiana* and *D. Texana*, were propagated and planted from the Gulf north to Ohio and New Jersey, and some of these are yet grown on account of their superior quality.

At the present time the Japan varieties (*Diospyros Kaki*) are attracting much attention in sections of the South where the thermometer does not fall below ten degrees above zero. In the coast region, from Norfolk southward, and quite generally in the cotton belt, they reach perfection of tree and fruit. By budding or grafting them above ground on native stocks their culture has been extended northward to New Jersey and South Ohio, but they suffer during severe winters. At this period varieties are being introduced from North Japan and from China. Hon. Charles Denby, the United States Minister to China, sent scions of hardier Chinese varieties to the Department of Agriculture, which were lost by drying during the voyage. But the seeds he sent at the same time grew, and about three hundred seedlings have been sent out for trial. Some of these may extend the culture of large and good varieties northward. Recent attempts have also been made, we are told, to introduce the hardy and good varieties of south Central Asia. As the Japan varieties bear when only from two to four years old, and the fruit is set so abundantly that thinning is needed to keep up needed size and to prevent the trees breaking down, the production of train-loads for market in congenial climates is easily possible. But it is a new fruit and our people must be educated to its use. The round or flattened varieties with dark flesh, such as the Mazeli, will prove most profitable for market here, as has already been experienced in France, as they are sweeter, less astringent, and can be eaten before they are entirely softened. These varieties can also be picked when hard, and will ripen up in the crates like tomatoes. In the near future the best varieties will be shipped, wrapped in tissue-paper, as in France, and instruction given the grocers not to expose for sale until in the proper condition for dessert use.

When grown in larger quantity the best varieties will also be dried like figs. The writer, in connection with many American visitors, at the great commercial fair at Nishni-Novgorod in 1882, decided that the dried and pressed Asiatic persimmons were far more delicious and healthful than the Adriatic figs prepared in the same way.

The earlier varieties of these persimmons mature gradually. Hence growers go over the plantations several times at intervals, selecting the fruits in proper condition for shipment. This is easy after a little experience, as the color varies in ripening with

great uniformity, and the shape changes. The seedlings of this species usually develop only male flowers during the first three years of growth. Later some pistillate flowers appear. The select varieties are supposed to be perfect in flower, but increased experience has shown the gain in mixed planting of varieties, as with most highly developed fruits; but when varieties are mixed in planting the effects of cross-pollination appear on the fruits to a remarkable extent. Berckmans, of Georgia, says: "This variation in the color of the flesh has caused some confusion in reaching a correct nomenclature." The heavy and continuous bearing of the Japanese varieties has so retarded the growth that rather close planting is recommended not exceeding twenty by twenty-five feet each way. The *Texana* varieties are still smaller in growth and can be planted closer. Under cultivation the varieties of the *Virginiana* species make large trees with great spread of top, and should be planted accordingly, and the same is true of the Asiatic varieties of the Lotus type when introduced. Propagation by crown-grafting on transplanted native seedlings, and top-working on native stocks is given in Section 219 briefly. The writer's experience and observation lead to the belief that it is quite as easy to bud or graft as the pear, plum, and cherry, if the side-graft plan is adopted (86).

JAPANESE VARIETIES.

Among (*Yemon*).—Large, two and one-half to three inches in diameter, round, flattened, deeply ribbed; color dark orange red



Among (*Yemon*).

or yellowish red. Flesh red, very sweet, and edible while quite firm, but quality improves as it becomes soft. Season, September to November.

Costata.—Medium, conical, pointed, somewhat four-sided; color yellow. Flesh light yellow; dark flesh unusual; seeds rare; astringent until it softens, when it is very good. In West Europe grown under glass quite extensively.

Hachiya.—Large to very large, two and one-half by three inches in diameter, oblong, with blunt apex, somewhat ribbed; color bright crimson, with lines and blotches at apex. Flesh orange red, sweet and good when soft, but astringent when solid. Needs house ripening, and can be kept late. One of the varieties used for drying.



Hachiya.



Hyakume.

Hiyakume.—Large, three inches in diameter, usually flattened but often elongated; color yellow, with netted lines at the apex. Flesh orange red; only used when soft; a remarkable keeper. Tree of dwarf growth.

Ioyama Gaki.—Medium to large, round, slightly conical; color yellowish orange, with dark netting at apex. Flesh dark brown, very sweet, and good when eaten before softening.

Kurokuma.—Very large, three to three and one-half inches in diameter, roundish, flattened. Flesh red, sweet, and good when soft; keeps late, and requires house ripening.

Minokari (*Large Stork Egg*).—Large to very large, oblong, pointed; color vermilion red. Flesh red, very good in quality, but must be ripened indoors; valuable for drying.

Mio-tan (*Mazelli*).—Medium in size, roundish, somewhat oblong, slightly ribbed; color orange red. Flesh brownish red, but variable.

Keeps late, but the brownish specimens are edible and good before softening. Extensively grown in South France.

Okame.—Large, roundish oblate, with netted lines at apex; color orange yellow, changing to carmine, with bloom and waxy expression. Flesh light-colored, with light brown center around the seeds. Loses its astringency when well colored.

Taber No. 23.—Medium, oblate, flat or depressed at apex; color dark red with peculiar dotted surface. Flesh dark brown, sweet, and not astringent; quality good.

Taber No. 129.—Medium, roundish, flattened at base, with point at apex; color dark yellowish red, with quite rough surface. Flesh light brown, crisp, sweet; free from astringency. Keeps well and ships well.

Tane (Nashi).—Large to very large, diameter three and one-quarter by three and three-eighths; roundish conical, pointed at apex; color light yellow, changing to bright red. Flesh yellow and seedless; quality fine.

Triumph.—Medium, tomato-shaped; color yellow; has few seeds; quality very good. Said to be very productive.

Tsuru-no-ko (Stork Egg).—Large, two and one-half by three and one-half inches, oblong, pointed; color bright red, sometimes with black at apex. Flesh red, very good. Must be ripened in the house.



Tsuru-no-ko.



Yedoichi.

Yedoichi (Maru-gata).—Medium, round, often slightly oblong; flattened at base and narrowed at apex; color dark red, often with black mottling near apex. Flesh mahogany brown, with darker spots. Edible while solid. Fruit in large clusters.

Zengi.—Small, one and three-quarters by two inches, round or oblate; color light, with reddish shades. Flesh dark brown, with darker spots; very sweet and good; edible while solid in September and has a long season through October.

VALUABLE NATIVE VARIETIES.

The native persimmon (*Diospyros Virginiana*) under favorable conditions makes a tree from fifty to one hundred feet in height, which in open position makes a round-topped handsome tree, which is common over the South and extends North, of smaller size, along streams up to the forty-second parallel. Prior to the advent of the Japan varieties some of the largest and best of the native varieties were propagated locally by nurserymen and prized by planters. The best native varieties propagated at this time are the following, so far as known to the writer:

American.—Propagated in Maryland and described: "Large, yellow, early; ripens before frost. Tree very vigorous, with handsome large foliage." Dioecious (34).

American Hovey.—Propagated in Texas. Larger than the Texana species averages; yellow, and quality is stated by T. V. Munson to be better than any Japan variety tested. Tree a small grower. Dioecious (34).

Large Fruited.—Propagated in Southern Illinois and described: "The fruit of this variety is almost as large as some of the Japanese sorts; color orange yellow, firm, meaty, and as rich as the best figs when touched by frost." Dioecious (34).

THE AMERICAN GRAPES.

CHAPTER XXII of Part I, gives an outline of the history and development of the grapes of the United States, with their propagation, management, classes for varied uses, cultivation, pruning, and training.

At this time an attempt has been made to include and describe the varieties in actual cultivation in different portions of the Union. But it is more than probable that many local varieties of equal value with some of those included will become quite general favorites in the near future. This is specially true of some of the varieties originated by Mr. T. V. Munson, of Texas, and other workers along this line in the different States.

In the descriptions which follow the parentage will be noted as far as possible, and the varieties will be divided into only two general classes. (1) The varieties truly American, originated by selection or seedling production from our native species, including the natural and artificial hybrids of our indigenous species with the foreign species (*Vitis vinifera*). (2) The vinifera varieties, grown profitably in Southwest Texas, parts of Arizona, and on the west coast.

As far as possible the part of the United States in which the varieties are grown will be indicated, and in some cases the origin will be given.

NATIVE VARIETIES OF THE GRAPE AND THEIR HYBRIDS.

Agawam (*Rogers' No. 15*).—Bunch large, quite compact, shouldered; berry large, roundish oval; color dark red or nearly black. Flesh quite tender, juicy, vinous, with trace of native aroma; quality good. Season, some later than Concord. Requires mixed planting. Vinifera hybrid. Massachusetts.

Alice.—Bunch rather small, roundish; berry about size of Catawba; color dark wine, with lighter bloom of same shade. Flesh light



Alice. Reduced.

(To face page 370.)

green, tender, vinous, rich, with much juice, and slight aroma. Season in Ohio, early September. Commercially grown for market in the Southeastern States. New York. *Labrusca*.

America.—Bunch conical, quite compact; berries medium, round, with slight bloom, dotted by black spots with white speck in the center. Flesh melting, juicy, rich in sugar, and fruit acid, very good. Season some later than Concord. Grown in the Southwest. Hybrid. Texas.

Amber (*Rommel's Amber*).—Bunch long, shouldered, quite compact; berry medium, oval, or oblong; color pale amber. Flesh sweet, juicy, tender, vinous. Season, quite late. Commercial in Ohio and Southeast to Georgia. Missouri. *Riparia*.

Amber Queen.—Bunch medium to large, shouldered; berry large, round, or roundish oblong, amber-colored, but when mature purple. Flesh tender, rich, very good; a good keeper. Commercial in the Southeastern States. *Labrusca*.

Antoinette.—Bunch large, quite compact; berry large, white. Flesh sweet, rich, with few seeds and but little of the foxy aroma of the *Labrusca*. A vigorous, healthy, productive variety of the South and in Ohio. Season, earlier than Concord. *Labrusca*.

August Giant.—Bunch very large, very long; stem strong, often with short double shoulder; berry very large, oval or oblong. Flesh juicy, high-flavored, vinous, half tender. Season, first of September. A hybrid with *vinifera* that does well over a large part of the South and fairly well in Michigan. New York.

Bacchus.—Bunch medium, compact, shouldered; berry small to medium, black, with blue bloom. Flesh juicy, sprightly, good when fully ripe. Of Clinton type, mainly used in wine-making. New York. *Riparia*.

Barry (*Rogers' No. 43*).—Bunch medium, compact, shouldered, but it is wider than long; berry large, round; color black, with blue bloom. Flesh tender, juicy, sweet, pleasant; quality good; ripens with Concord. Requires mixed planting. Massachusetts. Hybrid.

Bailey.—Bunch large to very large, roundish, often branched, usually quite compact; berry large, black, with slight bloom. Flesh firm, meaty, juicy, sprightly; quality very good. Grown to best advantage in dry climates in the Southwest, where it does not mildew or rot. Does best with mixed planting. Hybrid. Texas.

Beacon.—Bunch large, roundish, often shouldered, quite com-

pect; berry large, black, with heavy white bloom. Flesh juicy, sprightly, tender; quality better than good. One of Munson's hybrids; popular Southwest, and grown profitably in Missouri and South Illinois. Does best with mixed planting. Texas.

Beauty.—Bunch medium, compact, shouldered; berry of size and color of Catawba, oblong, well covered with lilac-colored bloom. Flesh sweet, tender, delicious. In Georgia claimed to be as good in quality as Delaware, and Hussman, of California, sustains this opinion. A cross between Delaware and Maxatawney. Missouri.

Belvidere.—Bunch medium to large, cylindrical, shouldered, quite compact; berry medium size, round, black, with light blue bloom. Flesh quite tender, greenish, sweet, juicy; quality good. Season, early September in Michigan and Ohio. Of the Hartford type, but better in quality. Labrusca.

Berckmans.—Bunch medium, round, compact; berry round, dark wine color. Flesh juicy, vinous, rich, tender, very good. A cross between Clinton and Delaware much grown in Maryland and Southeast to Georgia. Georgia.

Bertha.—Bunch medium to large, compact, shouldered; berry medium to large, round; skin green and yellow. Flesh quite firm, meaty, juicy, sweet, with slight trace of muskiness, but it makes fine white wine and is very good for dessert or market. Illinois.

Black Eagle.—Bunch large, long, shouldered, not very compact; berry roundish oval, black, with some blue bloom. Flesh greenish, vinous, high-flavored, with tender pulp, but not very juicy. Does well in Michigan, also East and South to Maryland. New York. Hybrid.

Black Defiance.—Bunch large to very large; berry larger than Concord, black, with fine bloom. Flesh sweet, vinous, juicy, good to very good. Season, three weeks later than Concord. Only grown where Catawba and Herbemont ripen properly. Profitable South. New York. Hybrid.

Brighton.—Bunch medium to large, shouldered—sometimes doubly—quite compact; berries medium to large; color when ripe dark crimson or brownish red. Flesh rich, sweet, refreshing, with tender flesh to the center, very good to best. Requires mixed planting. New York. Hybrid.

Brilliant.—Bunch large, conical, shouldered, quite compact; berry medium to large, roundish; color brownish black. Flesh

sweet, juicy, vinous, with very tender pulp; quality very good; ripens in advance of Concord. A new hybrid variety that has advanced rapidly across the States. Texas.



Brighton. (Reduced).

Campbell Early.—Bunch large, roundish, shouldered, quite compact; berry large, nearly round, black, with blue bloom. Flesh meaty, very tender, juicy, sweet, rich, aromatic, without foxiness, quality very good for dessert or market. Season of Moore *Early*, but a good keeper. Ohio. Labrusca.

Carman.—Bunch large to very large, shouldered, conical, very compact; berry medium, round, black, with thin bloom. Flesh meaty, firm, yet tender when ripe, pure, and rich in quality, very good. Popular in West Texas and New Mexico. Texas. Hybrid.

Catawba.—Bunch medium, shouldered, not very compact; berry quite large, roundish, often oval; color pale red, with deeper red in the sun, and lilac-colored bloom. Flesh pulpy, juicy, sweet, with rich but slightly musky flavor; when fully ripe quality very good. Season, too late for the North, yet it is grown southeast of Lake Erie for wine-making. North Carolina. Origin, uncertain.

Centennial.—Bunch medium, compact, usually shouldered; berry round; color transparent red, with thin white bloom. Flesh sweet, vinous, refreshing; quality very good for dessert or wine. Season of Concord; a fine keeper; becoming commercial. New York. Hybrid.

Champion.—Bunch medium, compact; berries medium in size, roundish; color black; quality low, yet on account of vigor of vine, showy fruit, and heavy bearing it is extensively grown for market. Season, one week earlier than Hartford. Labrusca.

Clinton.—Bunch medium, shouldered, long, narrow, compact; berry round, small to medium, black, covered with thick bloom. Flesh juicy, quite acid, with some coarseness of pulp, but when fully ripe with brisk vinous flavor. This old variety has been found by Mr. Ricketts and others valuable in breeding better varieties. Riparia.

Colerain.—Bunch medium, shouldered, fairly compact; berry medium, round; color light greenish yellow, with thin white bloom. Flesh rich, pure flavored, sweet, with vinous aroma. Is said to be a Concord seedling, and that the vine is as hardy as the parent. Ohio.

Concord.—Bunch quite large, compact, shouldered; berry large, roundish, almost black, with bloom. Flesh somewhat buttery, juicy, sweet, with some toughness and acidity of center. Its hardness of vine, perfect foliage, heavy bearing, and attractiveness has extended its commercial planting widely. Massachusetts. Labrusca.

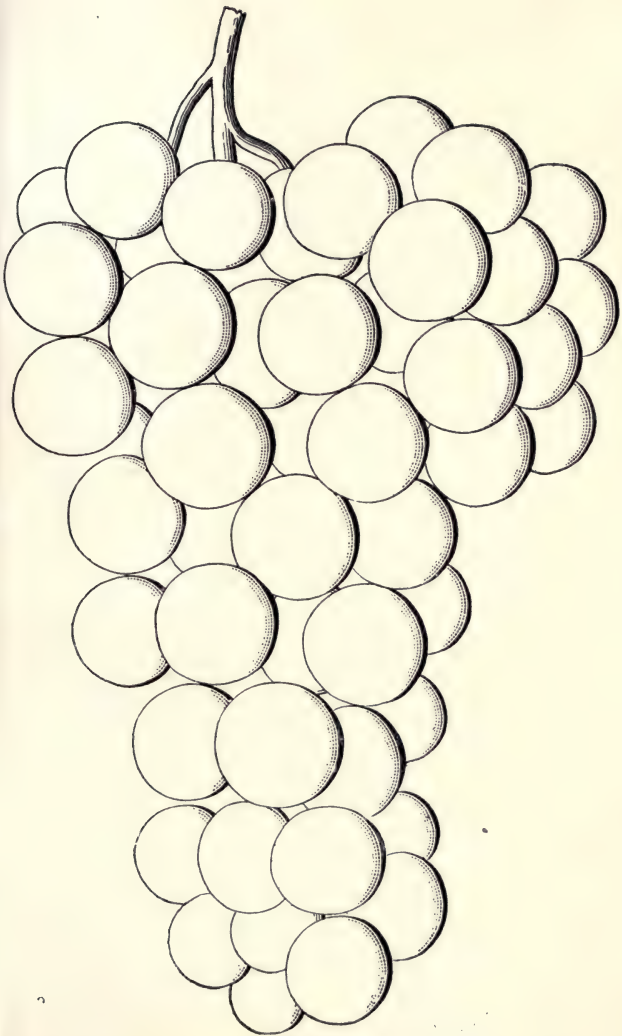
Cottage.—Bunch small, shouldered if well grown; berry size of Concord, round; color black, with bloom. Flesh juicy, sweet, and in the dry air of the West better than Concord. Season several days earlier than its parent the Concord. Massachusetts. Labrusca.

Croton.—Bunch medium, shouldered, not very compact; berry small to medium; color light greenish yellow. Flesh juicy, sweet, sprightly, rich, very good. Season, same as Hartford Prolific. Commercial in the Southeastern States. New York. Hybrid.

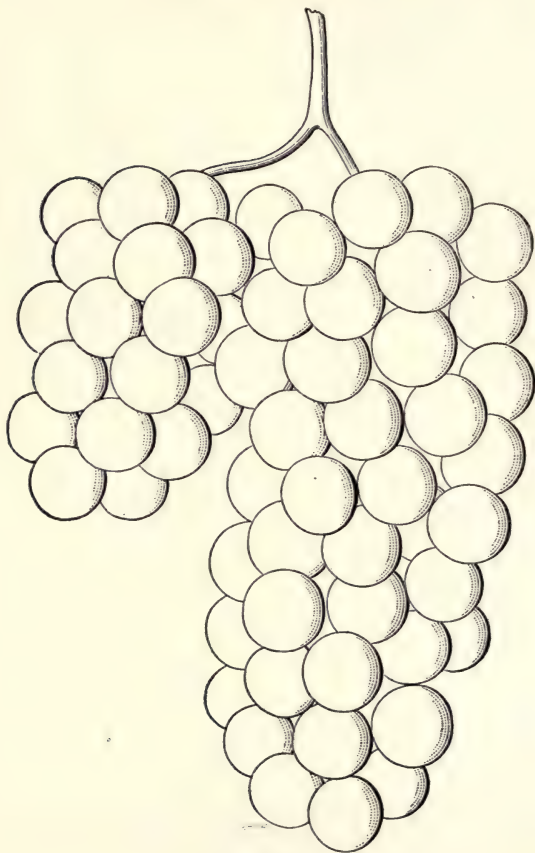
Cynthiana (*Red River*).—Bunch medium, shouldered, compact; berry below medium, black, with blue bloom, sweet, vinous; juice dark red, very rich. Much like Norton's Virginia, but better in quality. Grown in Missouri and the Southwest. Arkansas. *Æstivalis*.

Delaware.—Bunch small, very compact, and usually shouldered; berry small, round; color handsome light red. Flesh rich, vinous, sweet, aromatic, delicious; quality best. Grown commercially in several States, East, West, and South. Origin, uncertain.

Diamond (*Moore's Diamond*).—Bunch long, shouldered, quite



Concord.



Delaware.

compact; berry round; color greenish white, with white bloom. Flesh juicy, vinous, tender; seeds two to four; quality very good. A sister of the Brighton that has become commercial in several States. New York. Hybrid.

Diana.—Bunch large, very compact, irregularly shouldered by cluster on one side; color light wine; bloom light gray. Flesh whitish, mild, vinous, pleasant, with slight foxiness that disappears when kept. Only locally grown, mostly at the South. Massachusetts. Hybrid.

Downing.—Bunch large to very large, long, conical, somewhat shouldered, quite compact; berry medium to large, long, oval, black, with slight blue bloom. Flesh tender, greenish amber-colored, quite juicy, meaty, sweet, quite rich, good. New York. Hybrid.

Dracut Amber.—Bunch large, compact, usually shouldered; berry large, round. Flesh juicy, quite tender, but foxy; yet it is grown for market more extensively than Diana, as when kept for some time after picking, it vastly improves in flavor. Massachusetts. Labrusca.

Duchess.—Bunch medium to large, shouldered, compact; berry medium in size, roundish oval; color greenish yellow when ripe; at the West the color is bright yellow with light bloom. Flesh tender, juicy, sweet, very good to best. A good keeper. Grown largely South and in Colorado. New York. Hybrid.

Early Dawn.—Bunch medium long, shouldered; berry round, black, with heavy bloom. Flesh tender, juicy, sweet, rich, very good; matures early, and keeps and ships well. Prized in Maryland and the Southeastern States, but has been neglected farther North. New York. Hybrid.

Early Ohio.—Bunch larger than Moore *Early*, compact, heavy; berry medium size, black, with heavy blue bloom. Flesh firm, sprightly, subacid; quality fair to good. It ripens a week in advance of Moore *Early*, which has made it commercial in Ohio and other States southeast of the lakes. Hybrid.

Eaton.—Bunch large, roundish, shouldered, quite compact; berry large, round, black, with dense blue bloom. Flesh half tender, vinous, juicy; seeds few; good. As grown North not quite as good as Concord, but South it acquires more grape sugar, and the very large bunches are salable. Massachusetts. Labrusca.

Eclipse.—Bunch large, double-shouldered, not very compact; berry large. Flesh tender, rich, sweet, vinous, very good. A white

variety grown in Ohio and much prized in some localities. *Labrusca* cross.

Eldorado.—Bunch large; berry medium, white, high-flavored, tender, juicy, with very few seeds, very good. Season of Moore *Early*, and much prized in South Ohio. A cross of Concord and Allen's Hybrid. New York.



Eaton. (Reduced).

Elvira.—Bunch medium, shouldered, very compact; berry small to medium, round; color pale green, with yellow shade at the West. Flesh tender, sweet, and free from foxiness, good. Succeeds best west of the lakes where the dry air does not favor rot. In Colorado it is grown as a wine grape. Missouri. *Riparia*.

Empire State.—Bunch long, large, usually shouldered; berry small to medium, round; color light green or white, tinged with yellow, and covered with white bloom. Flesh tender, juicy, sweet, sprightly, without foxiness; a good keeper. A new variety, rapidly coming into general cultivation. New York. Hybrid.

Etta.—Bunch large, shouldered, fairly compact; berry quite large, white, with yellowish bloom. Flesh juicy, vinous, rich, very good. This is one of Rommel's best white varieties as grown west of the lakes. Missouri. *Riparia*.

Eumelan.—Bunch quite large, compact, shouldered; berry medium in size, roundish; color purple or bluish black, with some bloom. Flesh tender, melting, and soft to the center; quality very good. A home variety mainly. East of the lakes and in the Southwest. New York. *Æstivalis*.

Eureka.—Bunch large, compact, shouldered; berry medium, oval, red. Flesh rich, sweet, sprightly, vinous; very good. A seedling of Isabella, prized in Ohio and South where it has been tested. *Labrusca*.

Excelsior.—Bunch large to very large, often double-shouldered; berry medium to large, roundish oval; color pale red. Flesh sweet, vinous, rich aromatic, with muscat flavor; ripens late. Will have its best record where the *Herbemont* ripens fully. New York. Hybrid.

Faith.—Bunch large, long, shouldered; berry small to medium; color pale amber or white. Flesh juicy, sweet, pure flavored. Season as early as Hartford. One of *Rommel's* best white grapes; said to be free from mildew and rot. Rather small for market and is used mainly for wine-making. Missouri. *Riparia*.

Fern Munson.—Bunch medium to large, with long fruit peduncles; berry medium to large, round; color purplish red to nearly black. Flesh firm, very juicy, sprightly, with *Catawba* flavor. Season, late. Does well in Texas and north to Missouri. Texas. Hybrid.

Gaertner (Rogers' No. 14).—Bunch large, shouldered; berry large, purplish red, with thin skin. Flesh sweet, rich, aromatic, very good. Season as early as Hartford. This variety of *Rogers' hybrids* has been neglected, but is now coming into notice as one of the best and most valuable. Massachusetts. Hybrid.

Geneva.—Bunch medium, roundish, rather loose; berry medium to large, obovate to oval, white, or greenish white, with some white bloom. Flesh half tender, greenish white, sweet, vinous; juice colorless; quality good. Does well farther north, but is commercial South.

Goethe (Rogers' No. 1).—Bunch medium to large, loose, shouldered; berry large to very large, slightly oblong; color pale red when ripe. Flesh tender, juicy, sweet, luscious; very good. Succeeds well in the Southwest and in Colorado where it escapes rot. Requires mixed planting. Massachusetts. Hybrid.

Gold Coin.—Bunch medium or above, ovate, shouldered, fairly

compact; berry large, globular, yellowish, with tough skin. Flesh juicy, sweet; quality very good. A cross between Norton and Martha, much prized in the South. Texas.

Golden Gem.—Bunch medium in size, roundish, shouldered, quite compact; berries small, round; color rich golden, with delicate white bloom. Flesh light green, half tender, juicy, very sweet; quality very good to best. A cross of Delaware and Iona too small for market but delicious for home use where the Delaware proves profitable. New York. Hybrid.

Greins Golden.—Bunch medium, with long stem, compact, regular; berry large as Concord, round, brownish yellow, very juicy, free from foxiness, quite acid; quality good. A probable cross of Riparia and Labrusca. Missouri.

Hartford.—Bunch long, fairly compact, shouldered; berry medium to large, round; color black, with blue bloom. Flesh whitish, vinous, juicy, good. An old variety that has made slow commercial progress on account of dropping its fruit. Connecticut. Labrusca.

Hayes.—Bunch medium, roundish, shouldered, compact; berries medium, round; color greenish white, or at the West yellow amber, with dense whitish bloom. Flesh juicy, subacid, vinous, with rather tough center; quality very good. Season, earlier than Concord. Grown mostly in the Eastern, Southern, and Mountain States. Massachusetts. Labrusca.

Herbmont.—Bunch large, heavy, compact, shouldered; berry below medium, black, with blue bloom; skin filled with sweet, rich, aromatic juice, with but trifling show of pulp. A Southern variety widely grown for home dessert use and wine-making. Origin, uncertain.

Herbert (Rogers' No. 44).—Bunch medium to large, roundish, shouldered, quite compact; berry large, round; color black, with blue bloom. Flesh greenish, juicy, tender, pleasantly flavored; seeds large. Needs mixed planting. Quite widely grown. Massachusetts. Hybrid.

Highland.—Bunch large, long, shouldered, rather loose; berry large, round, black, with blue bloom. Flesh greenish white, juicy, sweet, tender, good. Season, quite late. A favorite in Maryland and west to South Missouri. New York. Hybrid.

Ideal.—Bunch medium to large, compact, usually shouldered; berry large, round, bright wine-red in color. Flesh tender, juicy,

sprightly, pure flavored; quality very good. A seedling of Delaware of much promise in the South, and brief trials farther North are favorable. Missouri.

Iona.—Bunches large, shouldered, not very compact; berry medium to large, round; color pale, becoming darker at full maturity, with bluish white bloom. Flesh greenish white, very juicy, vinous, quality nearly best. Grown quite widely, but in a small way. New York. Labrusca.

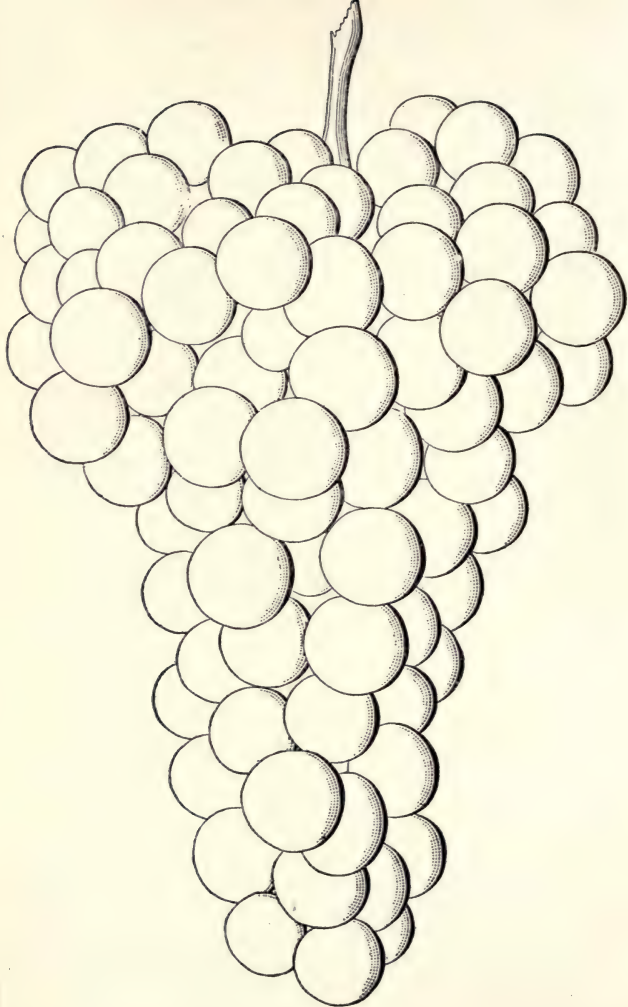
Irving.—Bunch very large, shouldered, compact; berry larger than Concord, yellowish white in color, tinged with pink when fully ripe. Flesh vinous, sweet, but not rich in flavor. Season, later than Isabella, hence it is mainly grown in the South. A hybrid of Concord crossed with White Frontignan. New York.

Isabella.—Bunch quite large, shouldered, rather loose; berry large, oval; color dark purple, and nearly black when fully ripe, with blue bloom. Flesh tender, juicy, sweet, rich, with trace of muskiness; quality very good. Oldest American grape of good quality, and still largely planted in Colorado, Utah, and other States with quite long seasons. South Carolina.

Isabella Regia.—Of this variety, now grown in California, Prof. Hilgard says: "A remarkable giant-leaved and very prolific sport of the Isabella, originating by bud-variation with Mr. J. P. Pierce of Santa Clara. The berries, like the leaves, are of extraordinary size, and when ripe the fruit is exceedingly sweet and strongly aromatic. It is therefore accepted as a showy perfumed table grape on the west coast. The berries are too soft for shipment to any distance, but, all things considered, keep fairly well." This has proven profitable east of the mountains, where the Isabella thrives, so far as tested.

Ives (*Ives' Seedling*).—Bunch medium, compact, shouldered; berry medium, roundish oval; color black. Flesh sweet, pulpy, and quite foxy until fully ripe. It has proven most profitable as a market variety in New Jersey and South, where the seasons are long enough to ripen it fully. When fully ripe it also is used extensively in wine-making. Labrusca.

Jaeger, Herman.—Bunch large to very large, shouldered, conical, very compact; berry small to medium, black. Flesh tender, vinous, quite rich; seeds separate easily from pulp; quality better than Concord. One of Munson's crosses that requires a dry climate. Texas.



Iona.

Janesville.—Bunch medium to large, short, shouldered, compact; berries medium to large, round, black, with slight blue bloom. Flesh greenish, tender, vinous; quality rather poor. The hardiness, vigor, and productiveness of the vine has led to its extended planting, especially far North. Wisconsin. Hybrid.

Jefferson.—Bunch large, short, shouldered, quite compact; berry medium size, round, wine-colored, with slight blue bloom. Flesh tender, light amber color, sprightly, vinous; seeds quite large; very good. A noted home variety, and is commercial in the Southeastern States. New York. *Labrusca*.

Jessica.—Bunch medium, roundish, shouldered, quite compact; berry medium to large, round, white to golden yellow in color, with some whitish bloom. Flesh tender, green, very sweet, juicy, good. Is prized as a home variety, but as yet not much grown for market. Canada. Hybrid.

Jewell.—Bunch small, roundish, shouldered, quite compact; berry small, round, black, with blue bloom. Flesh a little tough, whitish, vinous, sprightly, juicy; quality good. A thrifty hardy productive vine, and by many regarded the best, purest flavored early black variety. Missouri. Hybrid.

Lady.—Bunch medium, oblong, somewhat conical, slightly shouldered, fairly compact; berry medium to large, white or greenish yellow, with some whitish bloom. Flesh tender, vinous, juicy; quality good. Season, earlier than Concord. An amateur variety mainly, but is grown commercially in some sections. Ohio. *Labrusca*.

Laussel.—Bunch medium, ovate, compact; berry medium, round; color purplish, nearly black. Flesh firm, juicy, sprightly, sweet, good. One of Munson's hybrids, prized in the Southwest. Texas. Hybrid.

Lenoir (*Black Spanish*).—Bunch medium to large, shouldered if well grown; berry small, round, dark purple, nearly black, with light bloom. Flesh tender, without pulp, juicy, sweet, vinous. Grown South for dessert use and making red wine of exquisite flavor. It is also grown in Europe for wine-making. North Carolina. *Æstivalis*.

Lindley (*Rogers' No. 7*).—Bunch large, long, quite compact; berry medium, round, color pale, with violet bloom. Flesh sweet, juicy, high-flavored, very good. Needs mixed planting. Planted well across the continent. Massachusetts. Hybrid.

Lucille.—Bunch and berry of size of Worden; color red. Season, between Moore *Early* and Worden. A new variety, coming forward in States east of the lakes, of much promise.

Lutie.—Bunch medium, rather long, roundish, very compact; berry large, round, pale to dark red, with thin bloom. Flesh quite tender, juice uncolored, with foxy odor; quality quite low. Considerably grown in Southeastern States. Tennessee. Labrusca.

Martha.—Bunch medium, shouldered, compact; berry medium to large, roundish, greenish yellow, with bloom. Flesh sweet, juicy, and usually regarded better than Concord. A seedling of Concord, and is about the same in season. Grown quite largely for market east of lakes and Southeast. Missouri. Labrusca.

Massasoit (*Rogers' No. 3*).—Bunch medium, shouldered, rather loose; berry large, round; color claret red. Season, in advance of Concord. Flesh light-colored, juicy, vinous, with tender center. Grown east of the lakes. Requires mixed planting. Massachusetts. Hybrid.

Matchless.—Bunch very large, compact; berry large to very large. Flesh pure, sweet, sprightly, vinous, very good. Season, as early as Jewell. A new variety, with good record in Ohio.

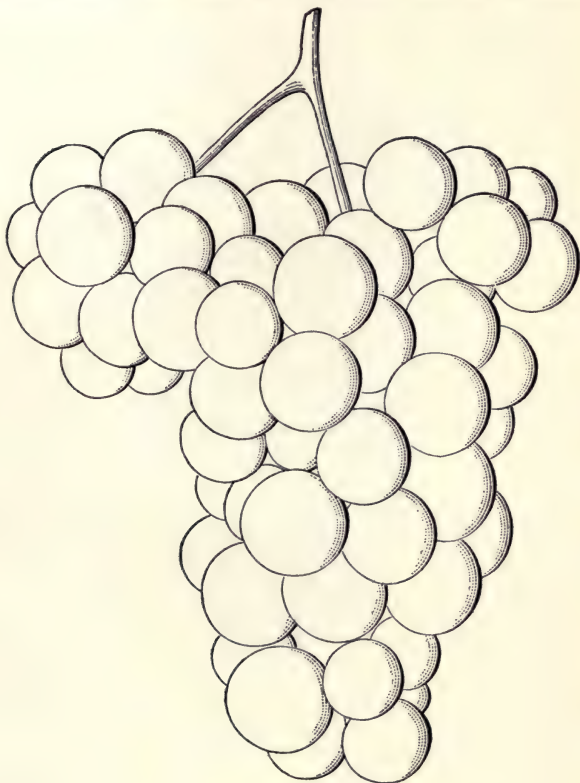
Merrimac (*Rogers' No. 19*).—Bunch medium, rather short and round; color black, with some blue bloom. Flesh greenish white, juicy, vinous, half tender, sweet; quality very good. Needs mixed planting. Grown east of lakes and in Kansas and Colorado. Massachusetts. Hybrid.

McPike.—Bunch large, even, long, shouldered, compact; berry very large, roundish, black, and covered with a rich bloom. Flesh sweet, juicy, rather rich, vinous, good. A seedling of Worden, succeeding well in the West and where tested. Illinois. Labrusca.

Mills.—Bunch large, long, shouldered, quite compact; berry medium to large, round, black, with light blue bloom. Flesh light green, vinous, rich, quite juicy, very good. Season, early October. A good keeper and a shipper of high quality. Ontario, Canada. Hybrid.

Missouri Reisling.—Bunch medium, shouldered, quite compact; berry below medium, round, greenish white. Flesh or pulp nearly absent. Like the Herbemont, it is, as A. J. Downing once said, "a bag of wine." Quality good for the table or the making of white wine. Missouri. Riparia.

Monroe.—Bunch medium; shouldered; berry medium to large, round, black. Flesh vinous, sprightly, good. Season of Hartford.



Martha.

Has been favorably reported in many sections as hardy, free from mildew, and a good bearer. New York. *Labrusca*.

Montefiore.—Bunch small to medium, compact, often shouldered; berry medium, round, black with blue bloom. Flesh melting, vinous, sweet, with pleasing aroma and flavor. Somewhat later than Concord. Grown for dessert and red wine in the South. Missouri. Riparia.

Moore Early.—Bunch somewhat smaller than that of Concord, roundish conical, rarely shouldered, quite compact; berry large, round, black, with thin bloom. Flesh vinous, juicy, with rather firm center, and slight foxiness; quality good. Season in advance of Concord. Needs longer pruning than most other varieties. Popular in nearly all the States. Massachusetts. Labrusca.

Moyer.—Much like Delaware in bunch and berry, but its color is darker red. Flesh greenish, pleasant, vinous, juicy; quality very good. Season, very early. Double-starred east of lakes and valued in many localities. Canada. Hybrid.

Muench.—Bunch above medium, shouldered, compact; berry medium, round; color black. Flesh tender, sweet, rich; quality nearly best. A new variety, coming forward rapidly in the South. Texas. Hybrid.

Naomi.—Bunch very large, shouldered; berry medium, roundish oval, pale green, often with red in the sun, and covered with white bloom. Flesh juicy, melting, sweet, sprightly; quality very good. Season, that of Concord. A hybrid of Clinton and Muscat; mainly grown for home use. New York.

Nectar.—Bunch medium to large, usually shouldered, quite compact; berry round, black. Flesh juicy, vinous, sprightly; quality very good. Grown commercially east of the lakes and does well in the South. New York. Hybrid.

Niagara.—Bunch large, shouldered, compact; berry large to very large, round, or slightly oblong; color yellowish white. Flesh juicy, vinous, sprightly; quality good to very good. Commercial in several States. New York. A cross between Concord and Cassady.

Noah.—Bunch medium, shouldered, quite compact; berry medium, round, pale yellow, with white bloom. Flesh with rather firm pulp, very sweet; quality fair to good. Now mainly planted for wine-making in this country and Europe. A seedling of Taylor. Illinois.

Norton Virginia.—Bunch medium, shouldered, quite compact; berry small, round; color dark purple. Flesh tender, pulpy, vinous;



Moore *Early*. Reduced.

(To face page 386.)



Niagara. Reduced.

(To face page 387.)

pleasant, yet with something of a harsh flavor. Mainly grown for wine-making at the South and Southwest. Virginia. *Æstivalis*.

Olita.—Bunch small, roundish, shouldered, quite compact; berry medium to large, roundish; color greenish, with whitish bloom. Flesh pale, tender, sweet, juicy, very good. Grown mostly in the South. Texas.

Oneida.—Bunch small, roundish, shouldered, quite compact; berry quite large, round, light wine-colored, with lilac bloom. Flesh whitish, very tender, sweet, pleasant; quality good. Season, last of September. Does well around the lakes and in Southeastern States. New York. Hybrid.

Ozark.—Bunch large, roundish, shouldered, quite compact; berry medium, round, black, with light blue bloom. Flesh half tender, meaty, vinous; quality good in Ohio and the southwest. Kansas. *Æstivalis*.

Paragon.—Bunch large, shouldered, compact; berry large, roundish, tender, sweet, rich, vinous, without central pulp, very good. Season of Concord. Grown in Ohio for table use and near market.

Peabody.—Bunch medium, roundish, fairly compact; berries medium to large, oval, black, with some blue bloom. Flesh tender, greenish, juicy, quite acid; quality fair to good. Season, early September. Grown in Ohio and east of lakes. New York. *Vulpina*.

Pearl.—Bunch large, shouldered, compact; berry medium, round, pale yellow, with delicate bloom. Flesh soft, melting, juicy, sweet, high-flavored. Ripens somewhat later than Concord. Quite extensively grown for table use and wine. Missouri. *Riparia*.

Perfection.—Bunch long, shouldered, compact; berry medium; color light red; sweet, sprightly, vinous. Season, early. Grown in Ohio mainly. *Labrusca* cross.

Perkins.—Bunch medium to large, shouldered, compact; berry medium, roundish oblong; color greenish white, followed by pale lilac or reddish shade, with thin white bloom. Flesh pulpy, sweet, juicy, with thick skin. Widely grown on account of hardness of vine and heavy bearing. Massachusetts. *Labrusca*.

Peter Wylie.—Bunch medium to large, compact, often shouldered; berry medium, golden yellow when fully ripe. Flesh meaty, rich, vinous, very good. The delicious Muscat flavor is hardly equalled

by any American variety. Does well where tested in Virginia and the South. A Hybrid, produced in North Carolina.

Pocklington.—Bunch large and showy, roundish, very compact; berry large, pale green, with yellow tinge, covered with whitish bloom. Flesh tender, juicy, sweet, with little central pulp. At the South when fully ripe said to be better than Concord, as it has more foxiness in smell than in taste. Quite widely planted, for market mainly. New York. Labrusca.

Poughkeepsie Red.—Bunch medium, roundish, shouldered, very compact; berry medium, round, wine-colored, with slight lilac bloom. Flesh tender, yellowish green, vinous, sprightly, with uncolored juice. In Ohio claimed to be as good as Delaware, and that it ripens well and keeps well. A cross of Iona and Delaware. New York.

Prentiss.—Bunch large, roundish, compact; berry medium to large, roundish oval, greenish white to pale yellow, with some white bloom. Flesh light green, vinous, rich, fairly juicy; quality good. Season, last of September; fruit keeps well. New York. Labrusca.

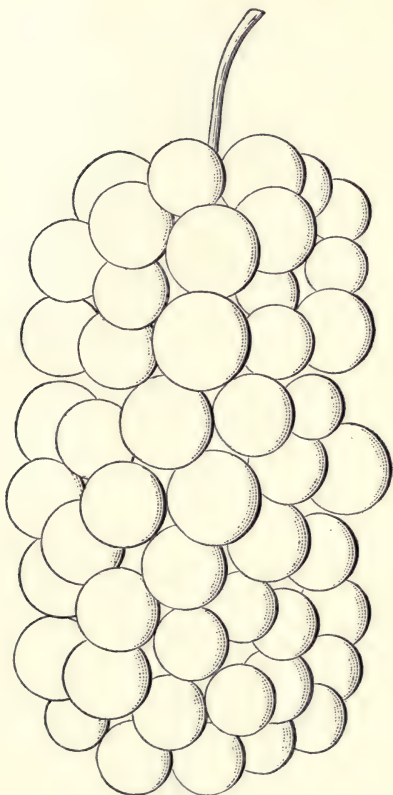
Rebecca.—Bunch roundish, heavy, compact, often shouldered; berry medium, oval, light green, with yellow cheek, and a light bloom. Flesh juicy, sweet, delicious. Season, a little later than Concord. Regarded east of lakes and South one of the best dessert varieties. New York. Labrusca.

Red Giant.—Bunch medium, compact; berry very large, reaching in Texas one and one-quarter inches in diameter; color dark red. Flesh tender, sweet, agreeable, but with some muskiness. Needs mixed planting. A success in the Southwest. Pennsylvania. Hybrid.

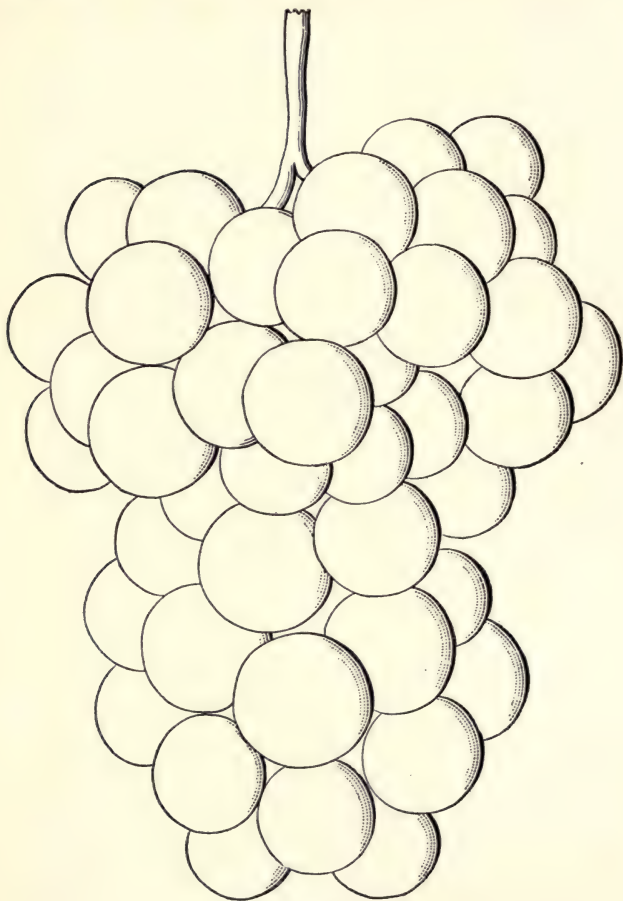
Salem (Rogers' No. 22).—Bunch medium, roundish, shouldered, compact; berry large to very large, round; color chestnut red, with some blue bloom. Flesh juicy, vinous, sprightly, quality good. A commercial variety in dry climates of the West where free from rot. Massachusetts. Hybrid.

Senasqua.—Bunch medium to large, often shouldered, compact; berry medium to large, roundish; color black, with blue bloom. Flesh firm, meaty, juicy, vinous, rich, very good. Grown in Ohio, and is profitable on certain soils and over the South. But the bunch is so compact that it is quite subject to rot except in dry climates. New York. Hybrid.

Superb.—A popular dessert and market variety, grown in North



Rebecca.



Salem.

Carolina and Kentucky, described, "Berry round, very large; color black; quality very good to best." Season, medium to late. Use, dessert and market. Georgia.

Superior.—Bunch medium, compact; berry medium, tender, sweet, vinous; quality very good to best. Season, early. Said to be free from rot and mildew. Ohio.

Telegraph.—Bunch large to very large, roundish, shouldered, very compact; berry medium to large, roundish oval, black, with blue bloom. Flesh white, sprightly, vinous, juicy, with slight aroma. As grown in Iowa the pulp is not tough as in Michigan, but is good in quality, and the same is true in Southern Ohio. Season, early. Pennsylvania. Labrusca.

Triumph.—Bunch very large, long, shouldered, compact; berry large to very large, roundish oval; color pale green to golden yellow, with delicate whitish bloom. Flesh greenish, juicy, vinous, rich, tender, very good. Ripens late, hence does best in the South. Ohio. Hybrid.

Ulster.—Bunch medium to large, roundish, compact; berry large, round, color red, with blue bloom. Flesh greenish, tender, vinous, rich; quality very good. Quality and tenderness are not desirable for distant marketing, hence the Ulster is planted mainly for home use where the seasons are long enough to ripen it. New York. Hybrid.

Vergennes.—Bunch medium to large, quite long, slightly shouldered, compact; berry large, oval; color amber red, with grayish bloom. Flesh greenish, tender, vinous, rich, very good. A Vermont variety now widely planted. Labrusca.

Victor (*Early Victor*).—Bunch medium, quite compact, usually shouldered; berry medium, roundish; color black with blue bloom. Flesh juicy, vinous, pulpy, quite rich; quality very good. Season, early. A Kansas variety, as yet most extensively grown in Canada. Labrusca.

Victoria.—Bunch large, roundish, shouldered, quite compact; berry medium to large, roundish oval, white, with some whitish bloom. Flesh greenish, half tender, sweet, vinous, quite rich, juicy, slightly foxy; quality good. Season, September. Is much prized in Ohio. Kentucky. Labrusca.

Warder (*Dr. Warder*).—Bunch large, shouldered; berry large, round, greenish yellow. Flesh sweet, rich, very good. One of

Theophile Huber's seedlings, as yet not widely grown. Illinois. Labrusca.

Washington (*Lady Washington*).—Bunch large to very large, shouldered, compact; berry medium to large, round; color light yellow, with tinge of pink in the sun and thin whitish bloom. Flesh soft, tender, juicy, vinous, subacid; quality very good. Season, that of Concord. Grown mainly South and in Colorado and Utah. New York. Hybrid.

White Jewell.—Bunch medium, long, very compact; berry medium, white. Flesh juicy, sweet, sprightly, very good. Said to be the earliest white grape grown in Ohio, and to be free from rot and mildew.

Wilder (*Rogers' No. 4*).—Bunch medium to large, conical, shouldered; berry very large, round; color black, with blue bloom. Flesh greenish, with amber shading. Flesh juicy, vinous, pleasantly flavored; quality very good. Requires mixed planting. Massachusetts. Hybrid.

Wilding.—Bunch medium, loose, shouldered; berry full, medium in size, round; color pale green, nearly white when mature. Flesh juicy, sweet, tender, and with little trace of central pulp, very good. A fine home and dessert variety, doing well East, South, and West. Grown for wine in the South. Missouri. A cross of Riparia and Labrusca.

Willie Bell.—Bunch medium, fairly compact, shouldered; berry medium, round, pale yellowish green in color. Flesh firm, meaty, nearly sweet, pure flavor, very good to best. A cross of Elvira and Delaware that is giving a fine record where tested in the South and as far north as Ohio. Texas. Hybrid.

Winchell (*Green Mountain*).—Bunch medium, long, quite compact, shouldered; berry small, round; color greenish white, with slight bloom. Flesh juicy, sweet, rich; quality very good. A Vermont variety that has met with favor in several States, including Iowa. Hybrid.

Witt.—Bunch medium to large; berry large, roundish oval, greenish white, with white bloom. Flesh melting, tender, rich, sweet, and sprightly, very good. A new Ohio variety that is giving great satisfaction where tested. Hybrid.

Woodruff (*Woodruff Red*).—Bunch large to very large, shouldered, roundish; berry round, red, with some bloom. Flesh whitish, juicy,

subacid, good. This variety succeeds best in the dry air of the West and Southwest. Michigan. Hybrid.

Worden.—Bunch large, long, shouldered, compact; berry round; color black, with blue bloom. Flesh greenish, pulpy, vinous, juicy, pleasantly flavored, good to very good. West of the lakes it is much richer in flavor than the Concord. Does well in nearly all the States. New York. Labrusca.

Wyoming (*Wyoming Red*).—Bunch rather small, compact and handsome; berry medium in size, red, but brighter than Delaware. Flesh tender, juicy, sweet, with some native aroma. Season, earlier than Delaware. Commercial in Maryland and the Southeast. Labrusca.

FOREIGN OR VINIFERA VARIETIES OF THE GRAPE.

Alexandria (*Muscat of Alexandria*).—Bunch large, long, loose shouldered; stalk long; berry large, oval, greenish yellow, changing to pale amber, with thin white bloom. Flesh firm, breaking, sweet, rich, with Muscat flavor. Grown in extreme South, on the lower Rio Grande, and in New Mexico and Arizona. Africa.

Almeria.—Bunch large, irregular conical, often shouldered and branched; berry variable in size, roundish, flattened at ends. Flesh firm, not very juicy, and with neutral flavor. A remarkable keeping and shipping variety, doing well in the hot interior valleys of the Southwest, especially in Arizona.

Black Hamburg.—Bunch very large, broadly shouldered, conical; berry large, roundish oval; color blue black, covered with blue bloom. Flesh firm but tender, very juicy, rich, sugary, very good to best. Grown in Southwest Texas, New Mexico, and on the west coast. Germany.

Black Malvoise.—Bunch large, quite loose, branching; berry very large, oblong; color reddish black, with faint bloom. Flesh juicy, rather rich, vinous, and pleasant flavored. Grown as a table grape in Arizona, Southwest Texas, and on west coast.

Black Prince.—Bunch long, large, usually not shouldered; berry large, oval; color purplish black, with thick blue bloom. Flesh white or greenish, tender, very juicy, sugary; quality high. Prized in South Colorado, Arizona, and extreme Southwest Texas. Europe.

Calabrian.—Bunch very large, long, tapering, often one foot in length, slightly shouldered; berry large, round, yellowish, quite

transparent. Flesh quite firm, sweet, good. An Italian variety, doing well in the dry climate of extreme Southwest Texas and South Mississippi.

Early Black (*Madeleine*).—Bunch medium, compact; berry round, black, covered with blue bloom. Flesh quite sweet but not rich. Grown in Arizona on account of its extreme earliness; also on the west coast.

Griesa.—Bunch very large, compound, nearly as large as Calabrian; berry very large, purplish black, meaty, juicy, very good. Does well in Central and Southwestern Texas and Mississippi. Italy.

Golden Champion.—Bunch eight to nine inches long, ovate in shape, shouldered, and with thick fleshy stalk; berry very large, one and three-eighths inches long and one and one-eighth inches wide; color pale yellow and amber when ripe. Flesh firm, very juicy. Does well in Southwest Texas. England.

Lombardy. (*Flame Tokay*).—Bunch very large, shouldered, compact, handsome, often weighing seven pounds; berry large, roundish oval; skin pale red or flame color. Flesh firm, sweet, well-flavored, but not high, yet good in warm climates. Grown in New Mexico, Arizona, and extreme Southwest Texas; also on west coast. Europe.

Malaga (*Muscat St. Laurent*).—Bunch long, loose, shouldered, but often compact and roundish; berry roundish oval; color greenish yellow. Flesh very tender, melting, juicy, with Muscat flavor. Does well in Central and Southwestern Texas and New Mexico. Spain.

Millennium.—Bunch large to very large, oval; berry light-colored, juicy, sprightly. Does well in Southwestern Texas. Hungary.

Mission.—Bunch large, somewhat shouldered, rather loose on account of being divided into several small lateral clusters; berry medium, round, purple or black, with heavy bloom. Flesh sweet, juicy, delicious. As a dessert variety preferred by many to the firmer-fleshed vinifera varieties. Does well in Southwest Texas and Arizona, also in California where it originated.

Morocco (*Black Morocco*).—Bunch very large, loose, shouldered; berry not uniform in size, ranging from medium and round to large and oval; color black when fully ripe. Flesh firm, sweet, high-flavored; late in season. The small berries are seedless, and the larger ones have usually one seed. Grown in New Mexico, Arizona, and on the west coast. Europe.

Sultana (*Seedless Sultana*).—Bunch large with heavy shoulders

or wings, usually quite compacted under culture in Arizona; berry small, round, golden yellow. Flesh firm, crisp, and destitute of seeds in Arizona, but often has seeds in California.

Sweetwater (*White Sweetwater*).—Bunch medium, loose, shouldered; berry large, round, with thin skin, showing the veins of the flesh; color white, with thin bloom. Flesh tender, watery, sweet, delicate. Grown in South Colorado, Oregon, and Arizona. Europe.

Thompson (*Seedless*).—Bunch large to very large, shouldered or branched, quite compact; berry medium to small, oval, greenish yellow, very sweet when used for dessert or drying, and wholly seedless. As tested by the writer the fruit is better in Arizona than in the moister air of the west coast. Turkestan.

Violet Chasselas (*Red Chasselas*).—Bunch medium, loose, rarely compact, shouldered, with long reddish peduncles; berry medium, round, red or violet, with violet bloom. Flesh juicy, sweet, delicious as grown in extreme Southwestern Texas and Arizona. Europe.

White Carnichon.—Bunch medium, round, rather loose; berry very long and narrow, often one and one-half inches long, tapering to both ends; color yellowish green, covered quite heavily with white bloom. Flesh firm, sweet; in warm climates delicious. Grown in Arizona, Southwest Texas, and on the west coast. Europe.

AMERICAN SMALL FRUITS.

THE RASPBERRY.

CHAPTER XVIII of Part I gives an outline of the origin of American varieties, the leading species from which they have been developed, the propagation of the different classes, culture, manuring, and winter protection. For reasons given in that connection the varieties are described under the following groups or classes:

- (1) The Blackcap Varieties.
- (2) Purple Cane Varieties.
- (3) American Red Varieties.
- (4) European Red Varieties.

BLACKCAP FAMILY (*Rubus occidentalis*).

This native species is very distinct in habit, character of fruit, and method of propagation from the tips (243). It is so distinct that it has no near relatives except the type known as *Rubus leucodermis*, found in the mountains of California, Arizona, and Utah, which only differs materially in the vine-colored fruit.

LEADING BLACKCAP VARIETIES.

Ada.—Large, jet black; quality good. In New Jersey and Ohio; said to bloom later than most other varieties, and hence is a sure cropper. Season, some later than Gregg.

Carman.—Medium to large, black; season of Tyler, but more inclined to dwarf habit; quality said to be superior to most blackcaps. Connecticut.

Conrath.—Large to very large, roundish ovate; color jet black, with whitish bloom. Flesh firm, juicy, quite rich, very good. Season, early. A new variety of great promise. Michigan.

Cumberland.—Very large, roundish ovate; color shining black.

Flesh firm, juicy, and sweet, one of the best in quality of its class. Rapidly coming into favor in Michigan and the East.

Doolittle (*American Improved*).—Medium, roundish, black. Flesh firm, juicy, with pleasant subacid flavor, good. One of the oldest of its class, and is yet widely grown. New York.



Ada.

Earhart.—Medium, roundish; color jet black, with shining gloss. Flesh juicy, mildly acid, good. Season, early; often gives a light crop in autumn. Illinois.

Eureka.—Medium to large, roundish, black. Flesh quite firm, juicy, good. Season, quite early. Double-starred in several States. Ohio.

Green.—Large, glossy black; quality good. Season, early. Grown as a market variety in Western New York. New York.

Gregg (*Western Triumph*).—Large, roundish oblate, with gray bloom. Flesh quite firm, fairly juicy. Season, rather late. One of the old varieties, widely grown. Indiana.

Hilborn.—Large, roundish oblate, black, with glossy expression and gray bloom. Flesh firm, quite juicy, sweet. A favorite across the continent. Ontario, Canada.

Hopkins.—Medium to large, round, black, with some bloom. Flesh soft; flavor pleasant; a good shipper. Originated near Kansas City, Missouri, and now commercial in several States.



Gregg.

Johnson Sweet (*Key Prolific*).—Some smaller than Gregg, roundish; color jet black, without bloom; unusually sweet, juicy, and good. In Ohio it is much grown for canning, as it is found to retain its sweetness and flavor to a high degree. Arkansas.

Kansas.—Large, roundish; color shining black, with little bloom. Flesh firm enough to ship well. Season, earlier than Gregg. A new variety that has made rapid advances. Kansas.

Lotta.—Medium to large, round, black, with some bloom. Earlier than Gregg and more productive. A leading commercial variety. Kansas.

Lovett.—A trifle smaller than Gregg, jet black. Flesh firm, sweet, with small seeds; quality very good for the class. Season, early. The canes are nearly thornless; much grown in Ohio and New Jersey. Ohio.

McCormick (*Mammoth Cluster*).—Medium, roundish, black, with

tinge of red, and some bloom. A popular old variety yet retained in many sections. Indiana.

Mills (*Mills' No. 15*).—Medium, roundish. A seedling of Gregg,



Hilborn.

somewhat smaller but better in quality; in trying climates it has not proven as hardy. New York.

Munger.—Large, very black, and the quality is said to be very



Johnson Sweet.



Older.

good for the class. It is somewhat later than Gregg, and grown in Ohio for canning and evaporating. Ohio.

Nemaha.—Large, roundish oblate, black, with some bloom. Flesh firm, juicy, and better in quality than Gregg at the West. Popular West and in New York. Nebraska.

Ohio (Alden).—Medium, roundish oblate, black, with considerable bloom. Flesh quite firm, rather dry, and very seedy. Much grown in localities where berries are dried, as it yields more dried fruit to the bushel than other varieties. New York.

Older.—Large, roundish, black, shining, but without bloom. Flesh juicy, firm, very good. Popular in the Western States. Iowa.

Palmer (Acme).—Large, roundish. In color and flesh it is much like Tyler, but it has proven a better bearer, and has been widely planted in a commercial way, especially at the West. Ohio.

Smith Prolific.—Very large for the species, jet black. Flesh firm, sweet, very good. This is prized by growers for its stiff canes with numerous laterals. Regarded specially valuable for drying and canning in New Jersey and New York. New York.

Souhegan.—Medium to large, roundish, black, without bloom. Season, early. An old variety, widely planted East and West. New Hampshire.

Tyler.—Small to medium, shining black, much like Souhegan, but it has been grown more extensively as it endures spring frosts better. New York.

Winona.—Very large for its class, roundish; color glossy black. Flesh firm, juicy. Season, early and it has proven a good shipper. Ohio.

PURPLE-CANE VARIETIES (*Rubus neglectus*).

In this division is included the varieties that appear to be intermediate between the red and black species. But it is only a horticultural division, as some that are included only propagate from sprouts, while the true purple-cane varieties propagate from the tips like the Shaffer and Ellisdale. See Section 244 of Part I.

Addison.—Medium to large, roundish; color brownish red. Flesh firm, juicy, very good; roots from the tips, but fruit has red-raspberry flavor. Is liked where known. Vermont.

Cardinal.—Large, red, soft, juicy, and better in quality than Shaffer. A peculiar variety, as when young it propagates from the

tips, but later it develops suckers which load with fruit as if they were subterranean stems of the parent plants. A satisfactory home variety. Kansas.

Caroline.—Medium to large, roundish oblate; color salmon yellow. Flesh soft, juicy, very good; rather soft yet much grown for home use and near markets. New York.

Catawissa.—Size medium, round, somewhat flattened; color dark reddish purple; quality very good. Still grown in New York and Georgia. Pennsylvania.

Colossal.—A seedling of Shaffer, grown in Indiana, much like its parent, but as grown in Iowa it has better color and endures drouth much better. Indiana.

Columbian.—Large, roundish; color purple. Flesh firm, juicy, subacid, good. Commercially grown in several States. New York.

Ellisdale.—Large, roundish oval; color light purple, with whitish bloom. Flesh firm, juicy, rich; quality better than good. Canes are strong, light red, and only propagate from the tip. A remarkable variety that has been overlooked by planters and propagators, as it was propagated locally nearly forty years ago. Iowa.

Philadelphia.—Medium, roundish; color dark crimson or purplish red. Flesh quite soft, juicy, well-flavored, good. The true variety has canes much thicker at the base and gradually decreasing in size to the top. This is still valuable below the forty-second parallel East and West. Pennsylvania.

Redfield.—Much like Shaffer in shape and color, but better in quality. The canes are stocky, not liable to breaking in storms, and it endures drouth much better than Shaffer. In Iowa this variety is rapidly becoming commercial.

Reliance.—Large, roundish, or roundish oblate; color red or crimson. Flesh firm, juicy, sweet, sprightly, good. Rapidly becoming commercial. New Jersey.

Sarah.—Large, round, garnet-colored, very juicy; quality very good. Season, later than its parent the Cuthbert. One of Professor Saunders' valuable productions. Canada.

Shaffer (*Shaffer's Colossal*).—Large, roundish; color dark red or dull purple. Flesh soft, quite acid, good; starred and double-starred across the continent. It has the Blackcap habit, but the fruit is much like the red varieties in color and flavor. New York.

AMERICAN RED VARIETIES (*Rubus strigosus*).

The red native varieties were in cultivation quite generally long prior to the advent and culture of the Blackcaps. It is very similar in plant and fruit to the varieties of the European species, and some of its varieties are about equal to the best European ones in quality but not in size.



Sarah. Reduced.



Shaffer.

Only the varieties are included that are being propagated and grown at this time, so far as known to the writer.

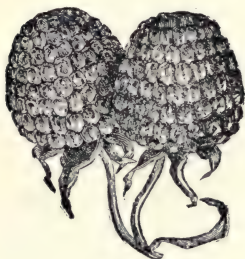
Blair.—Medium in size, roundish; color red. Flesh soft, juicy, very good. Said to be very hardy. Canada.

Brandywine.—Medium, roundish conical; color red or scarlet. Flesh firm for the class; quality good. Popular for marketing in several States. Delaware.

Coutant (*Coutant Seedling*).—As large as Cuthbert; color bright red. Flesh firm, and said to be an excellent shipper. Propagated in New York.

Crimson Beauty.—Large, round to oblong; color glossy scarlet; quality good. Season, early. A Kansas variety that does well in the dry air of the West when intermingled with other varieties, as it seems to be deficient in pollen.

Cuthbert (*Quinby's Favorite*).—Large, roundish, or obtuse conical; color scarlet crimson. Flesh quite firm, juicy, mild subacid, refreshing, with trace of wild red flavor. Popular for home use and market in many States. New York.



Cuthbert.



Golden Queen.

Golden Queen.—Medium to large, roundish conical; color yellow. Flesh soft, juicy, sweet; quality nearly best. Popular east of lakes and in all rather mild climates. A sport of the Cuthbert. New Jersey.

Hansell.—Medium, roundish; color red, with some bloom. Flesh soft, subacid, pleasant, good. Season, early. New Jersey.

Kenyon.—Large, roundish; color dark red. Flesh firm, juicy, with rich flavor, very good. One of the hardiest of its class. Iowa.

Loudon.—Medium, roundish conical; color bright red. Flesh firm, juicy, good to very good. Much like Kenyon. A promising new variety that is proving very hardy. Wisconsin.

Marlboro.—Large, roundish conical; color crimson. Flesh quite firm, juicy, and good. Popular market variety. New York.

Meredith Queen.—Size medium; color orange yellow. A yellow or amber-colored variety of the American red species. Not specially valuable, but of interest as it is the only yellow variety of the species yet reported. New York.

Miller.—Large, roundish; color bright crimson, which is retained

in market. Flesh firm; juicy sprightly; quality very good. Popular in Delaware and in southwestern States. Delaware.

Olathe.—Large, firm, juicy; color dark red. Season, rather late. A productive variety in Kansas and where tested. Kansas.



Marlboro.

Pomona.—Large, red, firm-fleshed; quality very good. Season, long. In mild climates in Middle States very productive. At the Geneva New York Station one of the best bearers of this class. New Jersey.

Royal Church.—Very large; color dark crimson. Flesh quite firm; quality very good. An Ohio variety, now highly prized for market and home use in Ohio, New Jersey, and other southeastern States.

Thompson (*Thompson's Early Prolific*).—Size medium; color bright crimson. Flesh quite firm; quality very good. Season, very early. Grown in Ohio, and it does well in the South. Ohio.

Thwack.—Large, ovate conical; color bright red, with slight bloom or pubescence. Flesh reddish, rather firm, subacid, good. Missouri.

Turner.—Medium, roundish conical; color bright scarlet. Flesh soft, sweet, rich, best in quality. Grown for home use and near market. Illinois.

Winant.—Large, bright red. Flesh firm; quality good. Resembles the Thwack, but it is more vigorous in habit and better in



Thompson.

quality. Popular in Ohio, where it is grown commercially; it is also prized in New Jersey, where it seems to have originated.

EUROPEAN RED VARIETIES (*Rubus Idæus*).

Varieties of this species have been grown in Europe since the historic period began, and some of the largest and best varieties were introduced for trial at an early day, but like the European grapes they have not found congenial conditions in the new home except in a few localities. Even in South California some of the Purple Canes—notably the Cuthbert—have displaced the European reds except in the foothills.

The propagation and care of the European hybrids and their crosses with the American red species are the same in all respects as adopted with our native red varieties (245).

All Summer.—Large, dark red, and best in quality. A leading variety on the west coast, and in Arizona, Utah, and parts of Colorado. It is also prized in New Jersey and Delaware. Mexico.

Clarke.—Large, conical, regular; color bright crimson. Flesh quite

soft, sweet, rich, very good. This fine variety is very productive in Western New York and the southwestern States; one of the best of the European reds to endure summer's heat and winter's cold. Connecticut.

Fastloff (*Filby*).—Very large, roundish conical; color purplish red. Flesh rich and nearly best in quality; too soft for market but popular as a home fruit where hardy enough. England.

Franconia.—Large, obtuse conical; color purplish red. Flesh rich and pleasantly acid. Grown in mild climates for home use and near market. France.

Heebner.—A large, red, conical berry of the Clarke type. It is better in quality than Cuthbert and some earlier. It is classed with the European reds, but it is said to have been grown from seed of the wild red species of Ontario, Canada.



Franconia. (Reduced.)

Hudson River Antwerp.—Large, oblong conical; color red. Flesh firm, with pleasant flavor. Once very popular on the Hudson and yet prized in Utah and South Colorado. England.

King (*Thompson's King*).—Size medium to large, and under good culture it is uniformly large; in Ohio Prof. J. W. Green says: "Large, firm, of beautiful color, and prolific. It is far ahead of Loudon or Miller here." It is now classed with the European reds, but it is probably a hybrid. Virginia.

Orange (*Brinckle's Orange*).—Large, conical, often oval; color bright orange or buff. Flesh juicy, quite soft, rich, and sweet; quality best. Probably an American hybrid.

Red Antwerp (*Knevet's Antwerp*).—Medium to large, roundish, or obtuse conical; color dark red, with prominent seed lobes and thick bloom. Flesh rich, juicy, with vinous flavor; grown on west coast and in the South mostly. Europe.

Superlative.—Large, conical, or long conical; color scarlet red; quality very good. In Ohio it is classed as very hardy, productive, and an excellent shipping variety, on account of its firmness of flesh. New York.

Vermont.—Medium to large, roundish oblate; color yellow. Flesh soft, juicy, and very good in quality. Growing in popularity east of the lakes. Vermont.

THE AMERICAN BLACKBERRY.

Like the native grapes the cultivated blackberries of the United States belong to several distinct types or species. But their near relation is indicated by the fact that the most diverse types, such as the high bush type of the North and the Dewberry will cross when adjoining, and the resulting seedlings bear perfect seeds. But as stated in Section 251 the horticulturists describe the habit of growth, character of cluster, and size and quality of the fruit of the blackberry without much regard to botanic distinctions. See Chapter XVIII for propagation, management, winter protection, and other information.

VARIETIES OF AMERICAN BLACKBERRY.

Agawam.—Large, roundish oblong, irregular; color shining black. Flesh sweet and melting to the core; ripens early. Stands drouth well where it is hardy. Massachusetts.

Allen.—Large, oblong, often oval; color jet black. Flesh firm yet tender, melting, sweet; seeds small; quality very good. Season, as early as Early Harvest. Bush vigorous, with relatively few thorns. Pennsylvania.

Barnard.—Large, roundish oblong. Flesh soft, juicy, subacid, rich. Canes are more pliable than most varieties in laying down; suckers not numerous. Iowa.

Briton (*Ancient Briton*).—Medium to large, oblong, black. Flesh melting and flavor very good. One of the hardiest varieties yet tested. The first public mention is found in Wisconsin Horticultural Report of 1869. Mr. J. S. Stickney then reported that it originated with A. H. Briton of Wisconsin. England had no varieties of this type at that time.

Brunton (*Brunton Early*).—Medium, oblong. Flesh soft, melting, rich in flavor; quality very good. An Illinois variety, now mainly grown in the South as an early shipping variety.

Dallas.—Large, oblong oval; quality good; quite extensively grown in Texas and the South. Texas.

Dorchester.—Medium to large, oblong; color shining black. Flesh juicy; quality good. One of the first good varieties cultivated and still grown in several parts of the Union. Massachusetts.

Early Harvest.—Medium, roundish oblong; color greenish black. Flesh soft, juicy, good. Season, very early. Popular in several States on account of its season.

Early King.—Said to be larger than Early Harvest and earlier in season; oval in shape, but irregular. Flesh tender to the center, and ripe as soon as it turns black. One of the best for home use and a near market; canes rather short, erect, stiff, with several small canes forming a hill or clump.

Eldorado.—Large to very large, oblong, irregular; picked when fully ripe, it is jet black, tender, sweet, and nearly best. Commercial in several States. Ohio.



Eldorado.



Erie.

Erie (Uncle Tom).—Large to very large, roundish oval, color jet black; quality good. A strong grower that has proven very productive in the middle States and South. Ohio.

Eureka.—A native of Alabama, belonging to the Southern species

Rubus cuneifolius. Berry large, long, very sweet, firm, and a perfect success in Texas and the Southwest.

Freed.—Medium oblong, juicy; quality good. Season of Snyder. In some sections a shy bearer, but in parts of Ohio it is prized on account of its hardiness and freedom from rust. Ohio.

Iceberg.—Medium in size, with fruit growing in clusters; color light, transparent; quality good; grown in New Jersey to some extent.

Kittatinny.—Large, roundish oblong; black, quite firm, juicy, sweet, very good. Popular across the continent in mild climates. New Jersey.

Lawton.—Large to very large, oval; when fully ripe it has fine color and is rich and very good. One of the oldest American varieties and starred in several States. New York.

Lincoln.—Medium in size, roundish. Flesh quite firm, very juicy, flavor rich, and pleasant. Succeeds well in Michigan and east of the lakes. Illinois.



Kittatinny.



Mammoth.

Lovett (*Lovett's Best*).—Large, roundish oval, and compact in form. Flesh juicy, with mild and pleasant flavor. New Jersey.

Mammoth (*Thompson's Early Mammoth*).—Much like Wilson's Early in fruit and foliage, but it is said to be much hardier and the fruit ripens earlier. Grown mainly as yet in Ohio, where it originated.

Maxwell Early.—Very large, sweet, rich, luscious, best in quality. Season, as early as Early Harvest. Bush low, strong, and stocky. Kansas.

Mesereau.—Large, oval; color sparkling black, and it remains black when exposed in market. Flesh sweet, rich, melting, very

good; cane strong and vigorous, and its record has been that it is hardier than Snyder. New York.

Minnewaska.—Large to very large, roundish oblong; color dull black; quality good. A New York variety, quite generally propagated in that State and the middle States.

Missouri Mammoth.—Large, oval; quality good. In South Illinois and Missouri prized on account of its long season and vigorous habit of growth. Missouri.

Ohmer.—Large, firm, tender to the center, sweet, very good; ripens late; canes very strong, and said to be hardy in Ohio and New Jersey.

Rathbun.—Large, roundish oval; color jet black. Flesh juicy, melting to the core; [quality very good; cane robust and has been proven to be hardier than Erie or Minnewaska. New York.

Reyner.—Medium, roundish or oblong, with large grains. Flesh sweet; quality good. A strong-growing plant, giving satisfaction at many points.

Robison.—Very large, roundish conical; quality very good. A Southern variety, originating in Texas. Commercial in the Southwest.

Snyder.—Medium, roundish oblong; color black, but inclined to a reddish shade after picking. Flesh juicy, sweet, and good in quality. T. T. Lyon, of South Haven, Michigan Station gives the quality as best. Indiana.

Sorsby May.—"Larger than Early Harvest, better in quality, and ripens about a week earlier." This description is given by T. V. Munson of Texas. Texas.

Stone (*Stone Hardy*).—Medium, roundish oblong. Flesh soft, juicy, subacid, very good. A hardy Western variety of spreading habit that covers the fruit well with foliage; valuable if kept well pruned (252). Illinois.

Taylor (*Taylor's Prolific*).—Large, roundish oblong. Flesh soft, juicy, subacid, rich, very good to best. Later than Snyder, and commercially grown in several States. Indiana.

Triumph (*Western Triumph*).—Medium, oblong oval. Flesh rich, sweet, with tender core; quality very good. Its main fault is said to be overbearing. Illinois.

Wachusett.—Small, oblong ovate. Flesh firm and good in



Snyder.

quality; canes drooping, with few spines. Reported favorably as to bearing on high light-colored soils; on rich black soils not productive.

Wilson (*Wilson's Early*).—Large to very large, oblong oval. When fully ripe the fruit is sprightly, mildly acid, and rich in flavor. Popular in New Jersey, New Mexico, and Texas.

THE DEWBERRY.

In different parts of the Union the trailing blackberry, or dewberry, runs into many forms or types, some of which have been decided to be distinct species. The most important of the four species is the Northern Dewberry (*Rubus villosus*). This seems nearly allied to the cultivated blackberries, as natural hybrids often occur, and it has given several of our best varieties. The Southern Dewberry (*Rubus trivialis*) has also given some varieties of value which have become commercial in the South. The Western species (*Rubus vitifolius*) has also given some cultivated varieties.

Bartel.—Large, rich, juicy, subacid, and firm enough for shipping. This was the first-named variety tested by the writer, and is still one of the desirable ones for Northern culture. Illinois.

Logan Berry.—Very large, conical, sometimes one and one-quarter inches long; color dark red; quality scarcely good for dessert use, but is much improved by stewing and makes a desirable sauce. It is here classed with the dewberries as it has the habit of growth of that class, but it is supposed to be a cross between the Texas Early blackberry and a red raspberry. By covering in winter this variety is grown successfully in the southeastern States and as far north as New Jersey.

Lucretia.—Very large, oblong ovate. Flesh tender, juicy, almost melting, good. The leading commercial variety across the continent. West Virginia.



Lucretia.

Mammoth.—Very large and long, specimens in some cases two and three-eighths inches long. Prof. Wickson states: "The fruit is more acid than the Lawton, but when perfectly ripe is sweet and of superior flavor." A hybrid produced on the west coast by crossing the native species of California with pollen of Crandall's Early of Texas, which has something of a shrubby habit. The Mammoth at first throws up thick upright shoots. They then drop to the ground, and often run, if unchecked,

twenty-five feet in a season. It is only propagated from the tips like our Blackcaps. This will probably succeed well in the Gulf States.

Mayes (*Mayes Hybrid*).—Very large, roundish conical; color jet black; quality very good. Plant trailing when young, but later it attains a stronger habit and becomes partially upright. This variety has become commercial in the South on a large scale, and it is grown as far north as Missouri and Ohio. Texas.

Windom.—Size medium to large, oblong conical; quality very good. This is the hardiest variety yet tested in the prairie States. Minnesota.

THE AMERICAN STRAWBERRIES.

Chapter XIX of Part I gives historical notes on the development of our fine American varieties, together with the different systems of management and care. To an extent not found in any other country of the earth the strawberry in the United States has become a leading commercial fruit for a long period. The supply early in spring comes from the Gulf States, then follows the supply grown in successive points north to the Canada line, and a final supply reaches the northern markets from Oregon. It is not unusual for lovers of the fruit in the middle States to enjoy strawberries on the table daily for a period of two months.

VARIETIES OF THE STRAWBERRY.

Afton.—Medium, conical, somewhat irregular; color bright crimson; flavor subacid. Much like Warfield; stands drouth well at the West. Season of Lovett. Pistillate.

Anna Laurie.—Large, roundish; color glossy scarlet, with golden seeds like those of Jersey Queen. Flesh slightly colored; quality nearly best. Season, late. Flowers perfect. A favorite amateur variety in Canada and elsewhere. Ohio.

Arizona (*Arizona Everbearing*).—Medium to large, conical to broadly conical; color scarlet; calyx large; seeds prominent. Flesh lighter colored at center, firm; quality good. Usually ripens two crops under irrigation. A leading variety in South California, Arizona, and in New Mexico and Southwest Texas. Perfect.

Aroma.—Very large, conical, blunted at apex; color bright red

and crimson. Flesh pink, firm, very good. Season, medium to late. Is taking the place of Gandy as a market variety. Flowers perfect. Kansas.

Beecher (*Henry Ward Beecher*).—Large, roundish, uneven, irregular like its parent the Sharpless; color crimson. Flesh firm and flavor excellent. Season, early. Perfect.. New Jersey.

Bederwood (*Racster*).—Medium to large, roundish conical; color light shade of vermillion. Flesh not very firm, sweet, very good. Widely grown in many States. Perfect flowers. Illinois.

Belmont.—Medium to large, conical; color dark crimson. Flesh firm, very good. Flowers perfect. Prized on heavy soils in Massachusetts.

Belt (*William Belt*).—Large, oblong, conical; color dark crimson. Flesh quite firm, rich, high-flavored; quality nearly best. Flowers perfect. Popular in Delaware and Virginia. Does not succeed west of the lakes.

Bennet.—Medium to large, conical, usually regular; color scarlet to crimson. Flesh colored, quite firm, about as acid as Wilson, good. Perfect. A vigorous plant that endures drouth as well as the Lovett.

Beverly.—Medium to large, roundish conical, somewhat uneven; color deep crimson. Flesh firm, mild acid, very good. Perfect. A New England variety, prized for home use and market.

Bidwell.—Medium to large, round conical, or long conical, often with a slight neck; color glossy crimson. Flesh light red, quite firm, rich, very good. An old Michigan variety, yet prized in that State, Illinois, and other States. Flowers perfect.

Bisel.—Large, conical; color glossy crimson. Flesh quite firm, good. Under high culture unexcelled in yield East and West. A seedling of Wilson. Pistillate. Illinois.

Bismarck.—Large, roundish conical; color crimson. Flesh very firm, sweet; quality very good. A seedling of Bubach that has become commercial east of the lakes and is considerably grown in Iowa. Perfect.

Blonde.—Very large, roundish conic; color bright red. Flesh quite firm and high-flavored. Flowers perfect. Indiana.

Brandywine.—Very large, oblate conical; color crimson. Flesh firm, rather acid, good. Flowers perfect. Double-starred for market in several States. Pennsylvania.

Brunette.—Large, roundish; color dark red. Flesh quite firm,

high-flavored, best. Growing in popularity on account of size and quality. Flowers perfect.

Bubach No. 5.—Large, conical, irregular; color dark red or crimson; quality good. Plant vigorous and thrifty in prairie States and it is popular farther east. Pistillate. Illinois.

Bush Cluster.—A variety of the Crescent type, much like it in fruit and plant, but the fruit is larger and firmer. Flesh is sweet and soft, fitting it admirably for home use but not for market. It stands the hot sun of the South and prairie States without injury. Perfect.

Captain Jack.—Medium in size, conical, regular; color bright scarlet and later dark red; quality good. Grown in many sections to pollinate other varieties. Perfect.

Carrie.—Large, long, color bright scarlet, often crimson, with yellow seeds. Flesh white, solid; a good shipper. Grown commercially. Pistillate. Virginia.

Chairs.—Medium to large, roundish conical, irregular; color dark scarlet. Flesh not very firm; quality very good. Flowers perfect. Profitable for home use or a near market. Endures heat and drouth remarkably well.

Champion.—Medium to large, irregular, conical; color light red or scarlet; quality good. Plant vigorous, with good foliage even in dry interior climates. Perfect flowers.

Cinderella.—Large, conical, regular; color glossy scarlet; quality very good. An early variety, prized in Ohio and in the southeast States. It also has done well west of the lakes. Perfect.

Cleveland (Mrs. Cleveland).—Large, conical, often cockscorned; color deep red. Flesh firm, rich, very good. Prized in Canada and Texas, and commercial in Illinois. Pistillate. Ohio.

Cloud.—Medium to large, oblate conical; color light crimson; quality very good. Grown in the southern States. Pistillate. Louisiana.

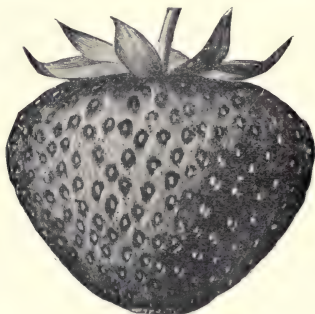
Clyde.—Very large, roundish conical; color bright dark scarlet. Flesh very firm, pinkish white; quality nearly best. Season, second early. Perfect flowers. Does well over the Union nearly. Kansas.

Crawford.—Large to very large, somewhat irregular; color bright glossy red. Flesh firm, very good. Flowers perfect. Widely grown. Ohio.

Crescent.—Medium, conical; color light red or scarlet; seeds

prominent. Flesh not very firm; quality good. Blossoms with Bederwood and Dunlap. An old variety, commercial in many States. Pistillate.

Cumberland (*Cumberland Triumph*).—Large, broadly conical, often irregular; color dark scarlet. Flesh firm; quality good. Flowers perfect. Mostly grown in the South. Pennsylvania.



Clyde.

Dayton.—Large, oblong conic, with blunt apex, regular in shape and size; color bright crimson. Flesh firm, solid, very good. Season, early. Perfect. Profitable in New Jersey.

Dollar.—Large, conical; color bright scarlet; quality very good. Flowers perfect. Popular on Pacific coast.

Dornan.—Large, roundish conical, smooth; color red and scarlet; quality good. A perfect variety, attracting considerable attention in Michigan and New Jersey.

Downing (*Charles Downing*).—Medium to large, conical, regular; color bright scarlet or crimson. Flesh firm; quality as grown West best. Does best when alternated with good pollen-bearers, though it appears to have perfect stamens. Kentucky.

Dunlap (*Senator Dunlap*).—Medium to large, long conical, with short neck; color light crimson; quality very good. Flowers perfect. Stands drouth at the West remarkably well. A seedling of Warfield that is better in quality and a better shipper. Ohio.

Earliest.—Medium, roundish, irregular; color light red. A

seedling of Michel *Early*, which it resembles, but it is earlier and the fruit is larger. Grown commercially in the South. Perfect flowers.

Edith.—Large, roundish, truncated; color scarlet on sunny side; quality very good. Popular in the Southeast as a home berry. Pistillate.

Eleanor.—Large, conical, regular; color dark crimson. Flesh colored; quality very good. Season, very early. Stands drouth wherever tested. New Jersey.

Enhance.—Large, conical; color bright crimson. Flesh firm; quality very good. Widely planted for market. Flowers perfect. Ohio.

Enormous.—Large to very large, roundish oblong; color dark crimson, glossy. Flesh firm, solid; quality good. Flowers pistillate. A seedling of Crescent that has rapidly come into favor. Illinois.

Epping.—Large, even-sized, roundish conical; color even bright crimson. Flesh firm, sweet, rich, very good. Season, early, but continues longer than usual. Pistillate. A New Hampshire variety, with a good record.

Eureka.—Large, roundish conical; color bright red. Flesh firm, good. Season, medium to late. Flowers pistillate. Hardly commercial as yet. Ohio.

Excelsior.—Medium to large, roundish, slightly conical; color bright red. Flesh firm, very good. Becoming popular, as it does well in many sections, and is very early in season. Flowers perfect. Arkansas.

Gandy.—Large, conical, regular; color glossy crimson; quality very good. Firm enough for distant shipment and an excellent canning variety. Flowers perfect. New Jersey.

Gardner.—As grown in Iowa, large, conical; color bright crimson. Flowers perfect. Rather soft for market, but popular for home use and near market. Iowa.

Geisler.—Large, long conical, but often nearly round; color bright scarlet. Flesh light pink, quite firm; quality good. Season, early to medium. Flowers perfect. Michigan.

Gibson.—Medium to large, conical, somewhat irregular; color dark red; quality good. Flowers perfect. A new variety of much promise. New York.

Gladstone.—Large, broad conical, irregular; color red; quality not the best. The plants are strong and vigorous and endure drouth

well in the prairie States. Fruit not firm enough for distant shipping. Perfect.



Gardner.



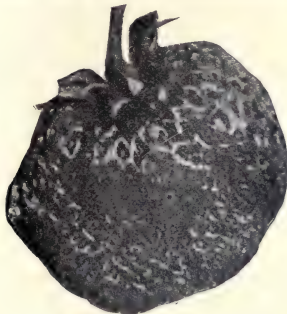
Glen Mary.

Glen Mary.—Large, to very large, roundish conical, ribbed; color crimson. Flesh pink and white; quality good. Season, medium

to late. Fruit stem strong, holding up the large fruit. Flowers perfect. A new variety now widely grown. Pennsylvania.

Great American.—Very large, regular, smooth; glossy crimson; grown on high strong stems that favor clean fruit. A New Jersey variety, grown under high culture for the New York market. Flowers perfect.

Greenville.—Large to very large, obtuse conical, approaching heart-shaped. Flesh pink to white, somewhat hollow, very good.



Greenville.

Flowers pistillate. Succeeds well East and West and in the South. Ohio.

Hall (*Hall's Favorite*).—Large, roundish, compressed, irregular; color scarlet. Flesh scarlet; quality good. It is much firmer than Bubach and ships well. Prized in Canada and in the southeast States. Maryland.

Haverland.—Medium, conical, somewhat compressed; color scarlet; quality very good. Pistillate. Starred in nearly all the States. New Jersey.

Hersey.—Large, conical, regular; color bright scarlet. Flesh quite firm; quality very good. Flowers perfect. Prized in New England for its size, quality, and productiveness.

Hilton (*Hilton Gem*).—Medium, conical, regular; color red and crimson. Flesh firm, juicy, rather rich; quality very good. Flowers perfect. A New Jersey commercial variety, each year extending its field of usefulness.

Hoffman.—Medium, conical; color dark crimson; quality good.

Flesh remarkably firm. Grown South almost exclusively. Perfect. South Carolina.

Hood River.—Very large, roundish conical; color scarlet. Flesh quite firm, sweet, aromatic, very good. Season, early. Doubly starred in Oregon, on the West coast, and is doing well in New Jersey. Flowers perfect. Oregon.

Howell.—Large, conical, regular; color scarlet and red; quality good. A popular variety in North Carolina. Staminate.

Hunn.—Large, roundish; color dark crimson. Flesh very firm; quality very good. A very late variety, later than Gandy or Michigan. A choice variety for canning. Flowers perfect. New Jersey.

Iowa Queen.—Medium to large, conical, smooth, regular; color glossy crimson with bright yellow seeds. Flesh firm; quality very good. Quite widely grown as a handsome variety that ships well and sells well. Flowers perfect. Iowa.

Jay Gould.—Large, roundish conical; color red and crimson. Flesh firm; quality very good. It is earlier than Crescent, larger and quite as good in quality. Planted commercially in Ohio and New York. Pistillate. Ohio.

Jersey Queen.—Large to very large, roundish oblate; color crimson and scarlet. Flesh firm, melting, vinous, very good. Season, quite late. Grown in Ohio and the southeastern States mainly. New Jersey.

Jessie.—Large to very large, long conical; color bright scarlet or red; quality good. Starred in several States, but not west of the Mississippi. Flowers perfect. Wisconsin.

Jewell.—Large, bright red, changing to crimson. Flesh very firm. Very productive. Grown in Ohio. Pistillate. Ohio.

Kentucky.—Large, roundish conical, color dark red. Flesh firm, mildly acid, rich, good. An old Kentucky variety, yet prized in Illinois and other States on account of its late ripening. Perfect.

Klondike.—Large, regular. Flesh very firm; color deep red to the center; quality very good. This is a Southern variety that in Mississippi and other States farther south is best in yield, best in quality, and the plant is free from disease. Perfect.

Lady Rusk.—Large, and described in Ohio as several days earlier than Crescent, and it is superior to it in every respect, holding its size well through the season, and, above all, one of the most productive varieties. Pistillate.

Lady Thompson.—Large, conical, regular; color crimson and red. Flesh quite firm; quality very good. The season is long and the size holds up well. Grown from Ohio southward mainly. Flowers perfect. North Carolina.

Leader.—Large, obtuse conical; color dark crimson. Flesh solid; quality nearly best; succeeds best on clay soils. Highly prized for home growing as it is rich and sweet. Flowers perfect.

Lester Lovett.—Large, roundish, somewhat conical, regular in form, and smooth; color brilliant scarlet. Flesh firm; quality good. Season, ten days later than Gandy. Flowers perfect. A new variety coming to the front in New Jersey and doing well at the West.

Lovett.—Large, conical or long conical; color crimson; quality very good. Fruit stems short and drooping. Remarkably productive in the prairie States, and popular everywhere it has been tested. Flowers perfect. Kentucky.

Luther.—Medium in size, roundish conical; color dark crimson. Flesh firm and good in quality. Season remarkably early, for which reason it is commercial in New Jersey and Delaware. Stands drouth well at the West. Perfect in flower.

Mary.—Large, conical, with blunt apex, regular in form; color deep crimson. Flesh quite firm; quality good. A New Jersey variety that has recently gained some notoriety. Pistillate.

Manchester.—Large, roundish conical; color bright scarlet. Flesh pink, firm, yet melting, mildly acid, very good. Starred in several States. Pistillate flowers. New Jersey.

Manwell.—Large, roundish conical, irregular; color dark crimson. Flesh bright scarlet; seeds sunken, firm; quality good. A new Iowa variety of value. Perfect.

Margaret.—Large, roundish conical, compressed; color dark crimson. Flesh dark scarlet, firm, often with slightly open core, good. Perfect. A seedling of Crawford which it equals in value. Ohio.

Marshall.—Large to very large, quite uniform in size, roundish conical; color dark glossy crimson. Flesh colored, firm, rich, very good. Flowers perfect. Mostly grown east of the lakes. Massachusetts.

Mastodon (*Late Mastodon*).—Very large, roundish conical with blunt axis; color bright crimson, showy. Flesh pink, not very firm;

quality good. Much like Bubach, but is preferred to it in many sections. New Jersey.



Mastodon.

McKinley.—Large, roundish conical; sometimes cockscombed, but usually regular; color bright crimson. Flesh firm; quality very good. Stands drouth well at the West, where the plant is large, vigorous, and productive. Perfect.

Meeks Early.—Medium to small, roundish conical; color dark red or crimson. Flesh colored, subacid, good. Season, early; succeeds best on clay soil. Mostly grown in the South. Perfect. Maryland.

Michel Early.—Small to medium, oblate conical; color dull red, appearance somewhat withered. Flesh pink, quite firm, ships well. Season, very early. A favorite on some soils and rejected on others. Arkansas.

Michigan.—Medium to large, conical, irregular; color dark red as grown in Iowa. Flesh firm; quality good. A seedling of Wilson, ten days later in season. Plants large, vigorous, and productive. Flowers perfect. New Jersey.

Miner (*Miner's Prolific*).—Medium to large, roundish conical, not very regular; color dark crimson. Flesh quite firm; quality very good. Perfect. Popular East, West, and South. New Jersey.

Monarch.—Large to very large, roundish oblate, conical; color bright red; quality good; said to be very productive on clay soils. Perfect. Illinois.

Mount Vernon (*Shuckless*).—Large, obtuse conical; color light crimson; quality very good. Pistillate. Mainly grown South, but does fairly well west of the lakes. Kentucky.

Murray.—Large, roundish conical; color bright crimson. Flesh firm, sweet, very good. Grown in New Jersey, and is commercial in the South. Flowers perfect. Of southern origin.

Neunan (*Neunan's Prolific*).—Medium in size, roundish conical; color light scarlet. Flesh firm, not very juicy; quality scarcely good. Largely cultivated in South Carolina for canning and market. Pistillate.

New York.—Large to very large, conical; color dark crimson; quality not very good. Remarkably vigorous plant, and it endures drouth well. Flowers perfect. New York.

Nick Ohmer.—Very large, roundish conical, often with three-sided form; color glossy red. Flesh firm, good. Flowers perfect. Ohio.

Omega.—Large, conical, irregular; color dark scarlet and crimson. Flesh firm, good. Season, late. In New Jersey said to be a better bearer than Gandy. Pistillate.

Ostego.—Large, round, regular; color bright scarlet. Flesh quite firm; quality good. Pistillate. Prized in New York, New Jersey, and, as far as tested, for home use and market. Season, quite late.

Parker Earle.—Medium to large, long conical, slightly necked; color bright red or scarlet. Flesh red, subacid, very good. Perfect. Grown across the continent. Texas.

Parry.—A seedling of Jersey Queen, and much like it in form and color. In New Jersey and the Southeast it is taking the place of its parent on account of added beauty and shipping qualities. Flowers perfect.

Pearl.—Medium, oblate conical; color dark red or scarlet; quality good. Perfect. Grown in the South mainly.

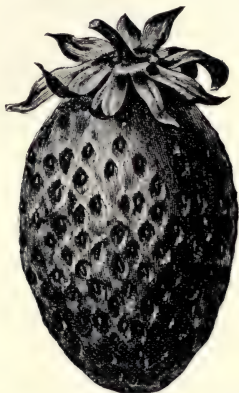
Pet.—Medium to large, roundish conical; color crimson and red; fruit stems short and drooping. Flesh not very firm; quality very good. A favorite home and near-market variety. Flowers perfect.

Phillips (*Phillips, Seedling*).—Large, irregular in form; color deep crimson. Flesh red, firm, subacid, good. Of Sharpless type, but is firmer in flesh. Pistillate.

President.—Large, roundish, often conical; color bright red and crimson. Flesh firm; seeds widely separated and not very prominent.

Season of Gandy. A new variety, originated in New Jersey, that seems to be taking the lead as a late variety. New Jersey.

Princess.—Very large, roundish; color light crimson. On rich soils in Iowa and New York it produces very large crops, but the berry is rather soft for market. For home use and near market very valuable. Pistillate. Minnesota.



Parker Earle.

Princeton Chief.—Medium to large, roundish conical; color bright scarlet; quality good. Pistillate. An Illinois variety, noted for good foliage and heavy crops.

Regina.—Medium to large, even-sized. Flesh firm; quality good. Commercial in New Jersey mainly on account of its late season of ripening and its extreme productiveness. Pistillate.

Ridgeway.—Medium to large, roundish conic; color rich scarlet. Flesh red, solid, rich flavored; seeds bright yellow. Grown in Canada and in several States, as yet in a small way, but it is favorably reported. Flowers perfect. Indiana.

Robinson.—Large, bright red. Flesh firm; quality good. A seedling of Crescent, with larger fruit and ripens later. Plant as vigorous as its parent. Perfect. Kansas.

Rough Rider.—Large to very large, roundish, slightly elongated, but often flattened and pointed; color dark red. Flesh very firm;

quality good. Perfect. Said to be a cross of Eureka and Gandy. New York.

Rubicund (*Saint Joseph*).—Medium; color bright vermilion. Flesh fragrant, sweet, aromatic. A home variety, becoming popular in New England. France.

Ruby (*Riehl*).—Large, conical, irregular, with blunted apex; color bright crimson. Flesh red, firm; quality best. Said to be a cross between Crescent and Sharpless. Flowers perfect. Becoming popular in localities. Illinois.

Sample.—Large, roundish or broad conical; color rich crimson. Flesh colored, rich, juicy, firm, very good. Season, quite late. Commercial in several States. Flowers perfect. Massachusetts.

Sandwich.—Medium, oblate conical; color dark crimson; quality good. Perfect in flower. Grown east of lakes and South. Illinois.

Saunders.—Large, conical; color glossy crimson. Flesh colored; quality very good. Perfect. Does not endure drouth well, yet it is popular in several States. Canada.

Seaford.—Large, roundish conical; color dark red; quality very good. Flowers pistillate; endures drouth well. Extensively grown in Delaware and the southeastern States. Delaware.

Sharpless.—Large to very large, roundish conical, usually irregular; color dark scarlet. Flesh quite firm; quality very good. Perfect. Grown mainly east of the lakes and in the southeastern States. Pennsylvania.

Shuckless (*Mount Vernon*).—Large, obtuse conical; color light crimson; quality good; the large uniform berries part readily from the calyx in picking. Grown for home use or near fancy market. Does well East and West. Flowers perfect.

Shuster (*Shuster's Gem*).—Medium to large, globular, regular, uniform; color bright scarlet; quality very good. Flesh somewhat soft, but high in flavor. Grown for home use and near market. Pistillate.

Smith.—Large, roundish, slightly conical, but irregular; color bright scarlet. Flesh very firm, quite acid, good. A seedling of Wilson that takes its place in many sections. Flowers perfect. Wisconsin.

Splendid.—Medium to large, roundish conical; color dark crimson; quality nearly best. Flowers perfect. Stands drouth well. As yet mainly grown South. Illinois.

Staples.—Medium to large, roundish conical, usually blunted at apex; color crimson. Flesh pink, quite firm. Season, extra early. A seedling of Warfield; profitable for early market. Flowers perfect. Ohio.

Star.—Large, roundish conical, irregular, compressed; color dark crimson. Flesh light scarlet; seeds sunken, firm; flavor vinous, good. Flowers perfect. A very promising new variety.

Success.—Large, heart-shaped; color glossy crimson. Flesh quite firm; quality good. A seedling of Bubach, and a better bearer and better berry. Flowers perfect.

Sucker State.—Medium to large, conical, regular; color light red to scarlet and crimson. Flesh firm; quality good. Perfect. Commercially grown in South Illinois and Ohio.

Sunrise.—Medium to large, roundish, compressed, irregular; color bright scarlet. Flesh firm, sprightly pleasant, good. Perfect. A seedling of Crescent and Sharpless that is grown profitably in many places for home use and market. Massachusetts.

Sweet Cluster.—Large, conical; color crimson and red. This is a popular Southern variety of the Crescent type, but it is larger, firmer, and earlier. Stands heat and drouth remarkably well. Flowers perfect.

Tennessee (*Tennessee Prolific*).—Large to very large, roundish conical, color bright red; quality good. Flowers perfect. Popular in southeastern States. Tennessee.

Thompson (*Lady Thompson*).—Large, ovate, regular; color crimson; quality good. Flowers perfect. Double-starred in the South and Southeast. North Carolina.

Timbrel.—Large, roundish conical, compressed, often irregular; color bright crimson. Flesh quite firm; quality very good. Pistillate. Grown east of the lakes mainly.

Uncle Sam.—Large to very large, conical; color bright red. Flesh quite firm; quality very good. Perfect flowers. A new variety that seems promising. Ohio.

Van Deman.—Medium, oblate conical; color bright scarlet. Flesh quite firm; quality very good. An early variety that stands drouth well in the prairie States. Pistillate. Commercial South and Southwest. Arkansas.

Victor Hugo.—Very large, high-colored, with firm flesh. A market variety grown in New Jersey with profit. Season, earlier than Crescent.

Warfield.—Medium to large, roundish conical; color dark crimson.

Flesh quite firm, colored, subacid, very good. Pistillate. Popular as a market variety across the continent. Illinois.

Williams.—Medium to large, roundish conical; color dark crimson. Flesh red; quality very good. Flowers perfect. A seedling of Sharpless, coming into favor. Canada.

Wilson (*Wilson's Albany*).—Medium, conical; color red and crimson. Flesh fairly firm, colored, quite acid, but pleasant when fully ripe. One of the oldest varieties, but it is yet doubly starred in several States. New York.

Wm. Belt.—Large to very large, usually conical, but very irregular. Flesh pink and white, subacid, good. A late Ohio variety, grown for the fancy market quite largely. Perfect. Does not endure drouth well.

Windsor Chief.—Large, even-sized, roundish conical; color red and crimson. Holds its size well to end of season. Stands drouth well at the West. Its value not yet recognized. Flowers pistillate.

Woolverton.—Large to very large, roundish conical; color crimson, with crimson seeds. Flesh red, solid, mildly acid; quality variable; not enough acid usually, but showy and sells well. Flowers perfect. Canada.

THE CURRANT.

Cultivated varieties are grown in the United States belonging to four distinct species. *Ribes rubrum* includes the red and white varieties of this country and Europe; *Ribes nigrum* includes the European black currants prized by our foreign settlers for culinary use; *Ribes Americanum* is the native black currant, which is very similar to the European, but with smaller fruit, and as yet but little attention has been given to its improvement or the selection of its best varieties; *Ribes aureum* is a native species, with black fruit, but very distinct as a species, and some of its varieties are in cultivation. For propagation and management see Chapter XX of Part I.

RED AND WHITE CURRANTS (*Ribes rubrum*).

Albert (*Prince Albert*).—A vigorous upright variety; bunch rather short but compact; berry medium to large, pale red, and ripens late. A favorite variety for canning. Another thing in its favor is that it holds its leaves until the wood-cells are perfectly stored with starch in autumn.

Cherry.—Very large; color dark red; clusters short but berries double the size of Red Dutch; quite acid. Popular in States east of the lakes and in the Mountain States.



Cherry.



Fay.

Fay.—About as large as the Cherry, and nearly the same in quality; but the Fay has longer clusters and usually is far more productive than Cherry. Its fault is the pendulous habit that drops some of the fruit branches to the ground.

Holland (*Long-bunched Holland*).—Size of berry medium, but bunches unusually long; ripens quite late. The vigorous habit of bush and the large thick leaves that hang on late without mildew has made the variety popular across the continent.

London Market.—Berry medium in size; cluster quite compact, on a long stem. The bush is upright, with healthy foliage, and is less

injured by leaf spot, twig borers, and other troubles than most other varieties.

Marvin (*Marvin White*).—Bunch medium; berry larger than White Grape, but of same color. It varies from the latter mainly in size and some additional acidity. New York.

North Star.—Somewhat smaller than Red Dutch but with longer stems, and fruit is more compact; quality not equal to Red Dutch.

Pomona.—Size of bunch and berry about the same as Victoria; color bright red. The claim is made by growers that it has fewer seeds and is sweeter than any other variety. Indiana.

Red Cross.—Said to be a cross between the Cherry and White



Red Cross.



Versaillaise.

Grape; berry as large as Victoria and about as acid; color lighter red than Cherry and later in season. A new variety, coming into favor.

Red Dutch (*Red Grape, erroneously*).—Larger in berry and bunch

than the old-fashioned red variety; bush quite upright, but slender in terminal growth. A favorite for jelly-making and canning.

Red Grape.—Small to medium, with smaller bunch and lower quality than Red Dutch. This has been often sold for Red Dutch. Not popular anywhere. Foliage not shining as with Red Dutch.

Ruby (*Moore's Ruby*).—Bunch larger than Cherry, but berry is some smaller; quality equal to Prince Albert; bush vigorous, and is a heavy bearer. Popular for home use and marketing.

St. Giles.—A new variety from France, said to be larger in berry and bunch than the Fay, with quality of Red Dutch; bush vigorous and quite upright. It is coming into favor as a commercial variety.

Versaillaise.—Much like Fay in size and color, but the bush is an upright grower. In most localities very productive. Commercial in several States; most growers prefer it to Fay.



Victoria.



White Dutch.

Victoria (*Raby Castle*).—Above medium in size of berry and length of bunch; color bright red. Season, later than Red Dutch.

The foliage retains its color and health as well as Long-bunched Holland.

White Dutch.—Habit of bush, size of berry, and length of cluster are much like Red Dutch; color darker in shade than White Grape; quality very good. It is less acid than the red varieties, and is commercial in many States.

White Gondouin.—Of size and quality of White Dutch, but the bush is not as healthy or vigorous, and it is not double-starred anywhere in the Union by the American Pomological Society.



White Grape.



Wilder.

White Imperial.—A variety now popular for dessert use in New York. Size of berry and bunch about like White Grape, but the bush is more erect and the fruit is much sweeter.

White Grape.—Larger in berry and longer in cluster than Red

Dutch when under good culture. The best dessert variety yet tested, on account of its mild acid and excellent flavor. Grown in all the northern States for home use and market.

Wilder.—Berry nearly as large as Fay with very good quality; bush vigorous, healthy, and heavy bearing. It has rapidly advanced in favor with home and commercial growers.

EUROPEAN BLACK CURRANTS.

Baldwin.—Fruit medium in size, with less acid than Black Naples, and it ripens ten days later. Better for canning than most European varieties.

Black Naples.—Fruit large, black, grown in small clusters. If properly pruned and treated as noted in Section 266 it is a heavy bearer and the fruit excellent when canned or stewed.

Champion.—Large, black, borne in short clusters. It is less acid and less musky than Black Naples; bush is more dwarfed in habit than usual with the species.

English Black.—Fruit medium to large; noted for even ripening of the crop; quality not quite equal to Black Naples.

Lee (*Lee's Prolific*).—Large to very large; quality about like Champion; bush dwarfish in habit, vigorous, very productive. Grown commercially.

Saunders.—Large, mild-flavored, very productive; quality for culinary use very good. Originated in Canada.

Wales (*Prince of Wales*).—Large, with proper pruning, and a heavy bearer. Flesh nearly sweet when ripe. Most popular of the species across the continent. Canada.

THE GOLDEN OR BUFFALO CURRANT (*Ribes aureum*).

Crandall.—Large as Black Naples when properly pruned (267), and wholly free from the odor of the English species. The true variety is also a remarkable bearer, and far better for culinary use than the English varieties. It has been much mixed by growing from seeds.

Deseret.—A still larger variety, grown in Utah, of about the same quality. This can be grown in the dry region of the Southwest where other currants fail.

Jelly.—A variety of this species sent out by R. H. Blair & Company of Missouri. As tested by the writer and the New York Experiment Station the fruit averages larger than Crandall and is more

regularly productive. When stewed or canned it has also proven better in quality.

THE GOOSEBERRY.

The varieties of this fruit belong to two closely related species. *Ribes grossularia* includes all the foreign varieties and their American seedlings, and in this work the American species, *Ribes oxycanthoides*, includes the native varieties and their probable crosses with the European species. See Section 268 of Part I.

AMERICAN VARIETIES AND THEIR HYBRIDS.

Apex.—Some smaller than Champion, oval; color green, with red on sunny side; very productive; quality better than Downing. An Oregon variety, showing some traces of foreign parentage. Does well in Michigan and near the lakes.

Excelsior.—Size of Houghton, roundish, smooth; color light green; quality good. A seedling of Champion originating in Indiana.

Champion.—Medium to large, roundish; color green with shades of yellow; quality very good. A remarkable bearer, not known to mildew. Indiana. A probable hybrid.

Crystal.—Some larger than Downing, oval; color dull green, with marked pubescence. Flesh rather soft when fully ripe; quality fair. Remarkably productive in Western New York. Probably a hybrid. Washington.



Downing.

Mountain.

Downing.—Fruit some larger than Houghton, roundish oval; color green with distinct rib-veins and smooth skin. Flesh juicy, quite soft, very good. Rarely mildews. Widely grown. New York.

Houghton.—Small, roundish oval; color light green, shaded red,

with light bloom. Flesh juicy, sweet, and best in quality for canning, kitchen use, and for wine. Massachusetts.

Mountain (*Mountain Seedling*).—Somewhat larger than Downing, oblong, smooth; color brownish purple. Flesh juicy, sweet, good. A productive variety at the West. Probably a hybrid. New York.

Pale Red (*American Cluster*).—Size of Houghton, roundish oval; color darker red than Houghton. Flesh tender, sweet, and good. Quite widely grown.

Pearl.—Medium to large, roundish; color light green, with shading of red; quality very good to best. Widely grown. Canada.



Pearl.

Red Jacket.—Medium to large, roundish oval; color light green, shaded with red. When ripe quite transparent; skin tender. Flesh juicy, rich; quality very good. Canada.

Smith.—Medium to large, oval; color green, with shading of yellow, often spotted with red, with a slight bloom. Probably a hybrid with the European species, but is classed with the American varieties. Vermont.

Strubler (*Strubler No. 1*).—Size medium, roundish oval; color green, smooth; quality very good. Probably a hybrid. Illinois.

EUROPEAN VARIETIES AND THEIR SEEDLINGS

(*Ribes grossularia*).

The very large foreign varieties of the Gooseberry and their hybrids are more troubled with mildew than those which are native, yet they are grown commercially more extensively in various parts of the Union than many suspect. Often crops are secured for home use or market by planting in airy position and mulching during the heated period to keep the soil cool. Spraying is also resorted

to in commercial plantations. The most satisfactory spray is with dilute copper sulphate, using one ounce to fifteen gallons of water, beginning with the expansion of the leaves, and continuing through the season at intervals of six to eight days. Their very large size secures good prices in market, and it is proving profitable to select a suitable airy location, and not to neglect the spraying. See Section 268 of Part I.

Alice.—Medium to large, oval; color green, shaded with light red; slightly hairy; quality good. Is not much subject to mildew in New York or Michigan.

Berkeley.—Large to very large, oval; color green, with reddish shades; quality very good. Very productive on the west coast, where most foreign varieties fail; it also is a success where tested in Arizona and Colorado.

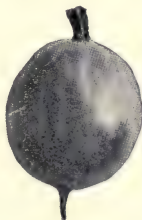
Blucher.—Very large, roundish oblong; color dark red. Flesh sweet; quality very good. Not much subject to mildew in Michigan or New York.

Catherina.—Large, long; color yellow; slightly hairy; quality very good. Grown in Canada profitably. English.

Chautauqua.—Large, roundish oval, smooth; color pale green; quality best. Grown east of the lakes and in the Far West. European descent.



Chautauqua.



Columbus.

Columbus.—Large, oblong, or roundish oblong, smooth; color white; quality very good to best; much like Triumph in fruit. Grown in Michigan, east of the lakes, and in the Far West. European.

Crown Bob.—Large, nearly round; color dark red. Flesh almost

sweet; quality very good. Succeeds best in the dry air of the West, but with spraying is quite generally grown. European.



Dominion.

Dominion.—Large, variable in shape, from roundish to oblong; color greenish white, somewhat transparent. Flesh sweet, very good to best. Remarkably free from mildew. Europe.

Duke of Sutherland.—Very large, oblong; color dark green, smooth; quality fair. Seems to be free from mildew in Canada.

English Red Jacket.—Large to very large, usually narrowed toward the stem; color light red, smooth. Flesh sweet, good. The American Red Jacket is wholly different.

Excellent.—Medium to large, roundish, quite smooth; color light red; sweet, very good. Bush a strong grower; productive in Michigan.

Golden Prolific.—Large, oblong, smooth; color golden yellow. Flesh subacid, tender, good to very good as grown in Ohio. English descent.

Hedgehog.—Medium, roundish; color white; hairy. A richly flavored variety, quite free from mildew in the lake region. Europe.

Huntsman.—Large, oblong, smooth; color pale green; sweet, good. Bush a strong grower, with little mildew. Europe.

Industry (*Whinham's Industry*).—Very large, oval, or roundish oblong, smooth; color dark red. Flesh mild, acid, with pleasing flavor. The most generally popular European variety.

Jolly Anglers (*Collier*).—Large, oblong; color green, downy, smooth. A late variety of best quality. An old English variety, doing well in the lake region. England.

Keepsake.—Large, nearly round, smooth; color greenish white; quality very good; commercial in New Jersey where it is extremely productive. In all places where tested it seems quite free from mildew. England.

Lancashire Lad.—Medium to large, nearly round; color dark red or wine color; somewhat hairy; quality very good. Bush a strong grower. Europe.

London.—Very large, one and one-quarter by three-quarters inches, pyriform; color dark red. Flesh sweet, pleasant, very good. Has been free from mildew in Canada and at points east of the lakes. Europe.

Matchless.—Large, oblong; slightly hairy; color green. Flesh very good. A strong grower, with little mildew so far as tested. Europe.

Puyallup.—Large, roundish, oval, smooth; color pale green. Flesh sweet, tender, very good. Quite free from mildew. English descent.

Queen of the Whites.—Medium, nearly round, smooth; color yellowish green. Flesh good. Not much subject to mildew. Europe.

Riccardo.—Very large, one and one-half by one and one-eighth inches, slightly pyriform; color green, tinged with red. Flesh sub-acid, good. Does well in Ontario and around the lakes. England.

Scotch Red.—Large, oval, smooth; quality very good. A table variety in Canada, where the bush is a free grower and healthy. English.

Stockwell.—Medium to large, oblong, smooth; color light green. Flesh sweet, good. Relatively free from mildew east of the lakes. England.

Succeed.—Medium to large, oblong, smooth; color yellowish green. Flesh sweet, good. Quite free from mildew. England.

Sunset.—Medium to large, oblong, nearly smooth; color yellowish green. Flesh sweet; quality best. Has been unusually free from mildew and is grown commercially. England.

Tally Ho.—Medium to large, pear-shaped, nearly smooth; color pale green. Flesh tender, juicy, mildly acid, good. Is very free from mildew in most places where tested east of the lakes and South-east. England.

Thumper.—Medium to large, oblong, smooth; color light green. Flesh sweet, good. Very productive and relatively free from mildew. England.

Triumph.—Large, oblong, or roundish; color pale yellow, smooth. Flesh sweet; quality very good. One of the most extensively grown for market as it is relatively free from mildew. European descent.

Warrington (*Red Warrington*).—Medium to large, oblong; color pale red; somewhat hairy; quality best. A vigorous variety in Michigan and New York. England.

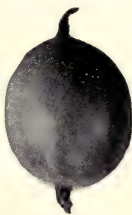
Wellington (*Wellington Glory*).—Large, oblong, smooth, with some bloom; color pale yellow; sweet, very good. Has proven more productive generally than any variety of European descent.

White Eagle.—Medium to large, oblong, pear-shaped, smooth;

color greenish white. Flesh sweet, tender, juicy, mild acid, good to very good. Is quite extensively grown, but generally needs spraying for mildew. England.



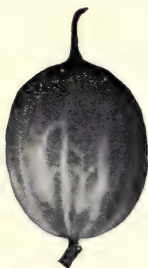
Triumph.



Wellington.



White Eagle.



Whitesmith.

Whitesmith.—Medium to large, nearly round, smooth; color pale yellowish green. This has given the most profitable crops in the relatively dry air of Colorado and Utah, but it is grown widely by spraying. European.

THE CRANBERRY.

Section 280 of Part I gives an outline of cranberry culture in the States. Although a native wild fruit, it may be said that it has become as much of a staple in every grocery of the States as the apple or orange. The large cranberry (*Vaccinium macrocarpon*) is now cultivated on thousands of acres of sandy swampy land, not

fitted for growing other crops as a rule. The Low-bush cranberry (*Vaccinium vitis Idæa*) is gathered in Nova Scotia and other coast and



Bell Type.



Bugle Type.

lake sections as found in a wild state, but it is nowhere cultivated. The cultivated varieties are divided into classes in describing. The Bell class or type has a decided bell-shape; the Bugle type resembles the bugle-head, and the Cherry is nearly round. In cranberry-growing centers names are given to the best varieties, but these names are local and we have no definite descriptions; yet in Massachusetts, New Jersey, and at Cape Cod a few varieties have become commercial.

SOME LEADING VARIETIES.

Dennis.—Large, bugle-shaped; color bright scarlet. Popular in New Jersey.

Early Black.—Large, bell-shaped; color purple black. Season, much earlier than other varieties. A favorite market variety in Massachusetts.

Early Red.—Medium-sized, bell-shaped; color bright red. Grown in New Jersey and at Cape Cod. Season, quite early.

Gould.—Medium, bell-shaped; color bright purple; medium early. Grown in New Jersey and Massachusetts.

Howe.—This is now a leading commercial variety in Massachusetts, but no description is at hand.

Lewis.—Medium, bell-shaped; color glossy scarlet. Season, medium early. A popular market variety of New Jersey.

McFarlin.—Very large, oval; color dark red. A leading variety in Massachusetts.

Makepeace.—Very large, roundish; color bright-rose purple. Season, early. A leading New Jersey variety.

Mathews.—A leading variety at Cape Cod and in Massachusetts; no description is at hand.

DWARF JUNE BERRY.

Section 272 of Part I gives the status of the Dwarf Juneberry as a dessert and culinary fruit and the propagation and pruning are given in



Dwarf Juneberry.

Section 273. The cultivated varieties are much alike in size and quality, but they differ somewhat in habits of bearing and season of ripening.

LEADING VARIETIES OF THE JUNE BERRY.

Alpina.—Somewhat smaller than the Greene County, but the fruit has more acidity, hence for most uses is better in quality; roundish ovate in form; cavity deep; stem long and stout; color dark red to



Alpina.

black. Flesh firm; juice slightly colored. Borne in clusters of five to seven. Season, earlier than most other varieties.

Carpenter.—Some smaller than Alpina; form roundish oblate; color dark crimson. Flesh light-colored, juicy, and sweet. Borne in



Reeves Juneberry.

open racemes or clusters of from five to eight berries. Originated in Oregon, on the slopes of Mount Hood, but hardy in Iowa.

Hall.—About the size of Osage, roundish oval; color dark red and nearly black when fully ripe. Borne in clusters of five to eight, ripening quite evenly. Has been grown commercially and the fruit sold for Huckleberry.

Mathews.—Fruit half an inch in diameter, oblong oval; color crimson and nearly black when fully ripe; quality very good. Ripens early in June in advance of all varieties yet tested.

Osage.—Berry about the size of Alpina, roundish oval; color crimson at maturity. Flesh light-colored, juicy, sweet. Borne in clusters of from six to eight. Does not ripen as evenly as Alpina. Said to have originated in Ohio; has been grown in Iowa as High-bush huckleberry.

Reeves.—Size medium, roundish oval; color deep purple when ripe. Racemes bearing from five to fifteen fruits that ripen irregularly giving a season of several days. Flesh purple when fully mature, juicy, sweet, with pleasant flavor.

Success.—Said to have originated in Pennsylvania, and first distributed by H. E. Van Deman, then of Kansas. In Iowa it has proven fully as hardy as varieties from the Northwest. Fruit about like Osage in size and quality, but the berries ripen more evenly. This variety has been more widely cultivated than the others named.

NUT CULTURE IN THE UNITED STATES.

CHAPTER XXIII of Part I gives an outline of the advance of nut culture within recent years. While it is true that nut-orcharding is yet largely in the experimental stage, yet at this time the production of the Almond, Walnut, and Japan Chestnut and its American seedlings, are commercial crops in parts of the Union; and some species of our native nuts, notably the Pecan and Shellbark Hickory, have been propagated and orchard-planting commenced, but as yet the market is mainly supplied from the indigenous forest-trees.

THE ALMOND.

The Almond is about as hardy in tree as the peach. But as stated in Section 282 its period of blossoming is so early that it rarely escapes frost except in favored localities in Southwest Texas, Arizona, and California. But in a small way certain varieties are grown in Florida, on the Gulf coast, and even in parts of Oregon. At this time we also have some promise of securing varieties from Turkestan, in Asia (282), that will flower later and prove hardier in tree.

LEADING VARIETIES NOW IN CULTIVATION.

Drake.—Large, broad, thin-shelled, with very plump kernels, often double. A leading variety in South California and Arizona.

Golden State.—Medium, often large, soft-shelled, with full kernel that parts readily from the shell. Ripens early and drops if not promptly gathered when mature.

Harriott.—Large, long, with soft-shell; kernel single, sweet, and good. Does well in a dry region, such as Arizona, with irrigation, on account of its dense foliage.

I X L.—Large, broad, soft-shelled; hulls easily; quality very good. Largely grown in Arizona and Southern California.

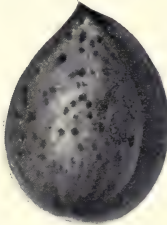
King (*King Soft Shell*).—Size medium to large, broad; shell thin and soft; quality best. Grown in Eastern Oregon as well as farther South on west coast.

Languedoc.—Medium, broad; shell thin, soft; kernel plump and sweet; usually does not bear in single block. Indeed about all varieties need cross-pollination. Grown in Eastern Oregon.

Lewelling (*Lewelling's Prolific*).—Large, long, oval; soft shell. A leading commercial variety.



Drake.



Languedoc.



Ne Plus Ultra.

Ne Plus Ultra.—Very large and unusually long; shell thin and soft. Grown commercially where the almond does well.

Nonpareil (*Extra*).—Medium in size, long oval; shell so thin as to be crushed with the fingers. Tree weeping in habit, and a very heavy bearer.

Paper Shell.—Size medium; shell very tender; kernel large, white, and sweet. A favorite variety on west coast and in Arizona.

Pride.—Large, smooth; shell thin and soft. Popular mainly on account of self-hulling, and it needs no bleaching.

Princess.—Medium; shell thin and soft; kernel smooth and good. Is grown in Florida and extreme Southwest Texas.

Siberian.—Size small, long oval; shell quite hard; kernel somewhat bitter; not edible. This is only referred to on account of its extreme hardness even in Minnesota and North Dakota. It may by crossing become the parent of hardy as well as edible varieties.

THE CHESTNUT.

Section 291 gives an outline of the relative value of American and foreign varieties of the Chestnut and the advances they have made on both continents as a home nut and as grown commercially.

Also hints are given on its propagation, planting, and protection of the nuts from the attacks of weevil.

The most promising fields for the extension commercially of chestnut-growing is on the northern border of its native growth, on sandy hillsides and high ridges with rather thin soil. Even in the prairie States it succeeds fairly well on thin dividing ridges, and on the bluffs of streams formerly covered with timber. The Japan varieties have most promise on the hills and mountain ridges south of the fortieth parallel of latitude. We now have growing in the same vicinity, and often on the same place, trees in bearing of the American sweet chestnut (*Castanea dentata*), of the European varieties (*Castanea sativa*), and of the Japanese varieties (*Castanea crenata*). This suggests the possible results of natural and artificial crossing. The Japan varieties and our native species are closely related to the European type, and no doubt they will cross readily. The Japan varieties are relatively small in tree, with slender branches, come into bearing much earlier than the native or European species, and the nuts are very much larger than either, but inferior in quality to our natives. We may hope by crossing to retain the hardiness of tree and quality of nut of our natives, and to secure varieties with lower habits of growth, earlier bearing, and larger nuts nearly or quite equal in quality to the native varieties.

As yet the propagation of native varieties has been neglected except in a very local way. The following are propagated to some extent.

AMERICAN VARIETIES OF THE CHESTNUT.

Cooper.—Large, borne in very large burr; very productive, and much grown in the vicinity of Philadelphia.

Dulaney.—Large, excellent in quality; said to bear when isolated. Kentucky.

Hathaway.—Large, light-colored, sweet kernel; regular in bearing. Sometimes seven nuts are found in one burr. Michigan.

Ketcham.—Medium to large, downy; quality best. New York.

Lawver.—Large, productive and desirable. Introduced from South Pass, Illinois.



Hathaway.

EUROPEAN VARIETIES OF THE CHESTNUT.

Prof. Bailey calls especial attention to the fact that nearly all the so-called European varieties now propagated are American-grown seedlings of supposed European parentage. But in some cases a natural cross with our native sweet chestnut seems quite evident. This is specially true of such varieties as Bartram, Paragon, and Ridgely, where a change has been wrought in tree, leaf, and quality of fruit.

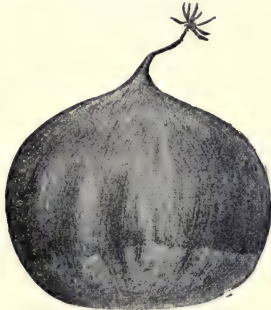
Anderson.—Medium in size, reddish brown, downy at tip; very productive. New Jersey.

Bartram.—Medium in size, downy at tip; dark red in color; very good in quality; uniformly three nuts in a burr. New Jersey.

Carson.—Large, dark brown, ridged, pubescent at tip. Propagated in Pennsylvania.

Comfort.—Medium to large, often three in a burr; very good; comes into bearing when very young. New Jersey.

Dager.—Large, and said to be better in quality than its parent the Ridgely. Propagated in Delaware.



Paragon.

Darlington.—Medium to large, dark brown, striped; pubescent at tip; very good; early to ripen. Delaware.

Moncur.—Medium, light-colored, tomentose. Popular in Delaware.

Numbo.—Large to very large, shell smooth; quality good. This

is a leading variety propagated in Pennsylvania, Delaware, New Jersey, and other States. Originated in Pennsylvania.

Paragon.—Large, broad, plump, downy; color dull brown; very good. Tree hardy and is propagated in several States. It may be a hybrid. Pennsylvania.

Ridgely.—Medium to large, quite downy; dark brown; quality very good. Propagated in several States. Delaware.

Scott.—Medium, brown, glossy, downy at tip; said to be free from attack of weevil mainly. New Jersey.

Styer.—Medium, pointed, dark brown, striped. Hardy and profitable. Pennsylvania.

Spanish (Marron).—Large, and best in quality. Grown under this name in Ohio and New Jersey. A round-topped handsome shade-tree and valuable for its nuts.

JAPANESE CHESTNUTS.

These varieties have come to the front rapidly on account of the size of the nuts, early bearing, and for more regular and continued bearing than the American or European varieties. Already quite a large part of the varieties offered by propagators have been grown from nuts produced in this country, and in some cases they may be modified in tree and fruit by crossing with varieties longer in cultivation of the European and home varieties.

Advance.—Large, smooth, dark brown; two or three nuts in a burr. A seedling of Giant. Grown in Ohio and southeastern States.

Alpha.—Large, usually three in a burr; bears when three years old. A seedling of Giant. New Jersey.

Beta.—Another seedling of Giant similar to Alpha, but ripens later. New Jersey.

Biddle.—Very large, light brown; burrs very large; two to five nuts in each burr; much prized in Maryland.

Black.—Large; kernel plump; excellent boiled or roasted; from two to seven nuts in a burr. Maryland.

Early Reliance.—Large; three to five nuts in a burr. Season, early. Grown in Ohio and in States east and south.

Felton.—Large and remarkable for its relative good quality. It is reported about equal to the best American varieties.

Giant.—Very large, smooth, dark-colored; one to two nuts in a

burr. Remarkable in producing so many valuable seedlings in different States.

Kerr.—Large, dark brown, smooth, handsome; two to three nuts in a burr; enormously productive in Maryland.

Killen.—Large as Giant, and the quality is said to be better than most of the oriental varieties; three nuts to the burr. Delaware.

Mammoth.—Very large, three to seven nuts in a burr, and it is said that in Ohio they often bear when only three to four feet in height of bush. This is reported to be a seedling of the Giant.



Japan Giant.

Martin (Col. Martin).—Large, yields usually five nuts to each very large burr; quality about like most oriental varieties. Maryland.

Superb.—Large, broad, dark brown; quality fair to good; usually three large nuts in a burr. New Jersey.

FILBERTS AND HAZEL-NUTS.

Up to the present we have no cultivated varieties of our native Hazel-nut. But enough has been done to show that by cultivation and



Selected Native Hazel-nuts.

selection we could soon develop varieties that would equal some of the European varieties in size and excel them in flavor. In the near

future work of this kind will be attempted. At this time the cultivated varieties are European or European seedlings developed in the States. As yet, however, it can hardly be said that we produce a home supply. Fully two-thirds of the American supply is imported from France and other parts of Europe. See Sections 293, 294, and 295.

VARIETIES OF FILBERTS.

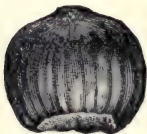
Alba.—A favorite in England and France, and does well in parts of California. Peculiar in having a white shade of color.

Cosford.—Large, oblong; shell thin; quality very good. Grown in New Jersey.

Du Chilly.—Large, oblong; quality nearly best. Grown in California.

Garibaldi.—Large, roundish; kernel very rich and sweet. Grown in Maryland.

Imperial.—Large, roundish; late to ripen; very productive in Maryland.



Imperial.



Kentish Cob.

Jones.—Medium, oblong; quality good. Grown in Delaware and is becoming commercial as it is free from disease. Delaware.

Kentish Cob.—Large, oblong; quality best. Does well in New Jersey and is becoming commercial.

Purple Leaf.—Large, oblong; quality very good. This is grown in Florida and southeastern States for ornament as well as nuts. The leaves and husks are rich purple in color.

Red Aveline.—Large, ovate; quality good, with excellent nutty flavor. Grown in California.

HICKORY NUT.

It may truly be said that the best native varieties of the Shagbark species of Hickory have been for a century a leading favorite nut of the Northern States, especially with the rural population; yet the supply up to the present has been mainly from the native reserved trees of the pasture, forest, or field. At this time, however, the propagation of select thin-shelled varieties has been attempted in several Northern States (289).

SOME DESIRABLE VARIETIES.

Dover.—Size medium, angular, broad at base, with point at base; shell quite thin; meat plump and good. Pennsylvania.

Eliot.—Medium in size, compressed, ovate, with angles; shell thin; good. Connecticut.

Hales (*Hales' Paper Shell*).—Large, inclined to be four-angled; quality best; shell very thin. Becoming commercial. New Jersey.

Jackson.—Large, oval, somewhat compressed; quality very good. Ohio.

Leaming.—Large, quite thin-shelled, and cracking without breaking the halves. Missouri.

Meriden.—Large, oblong, compressed; quality good, with plump kernels; shell not as thin as some select sorts. Connecticut.



Jackson.



Woodbourn.

Milford.—Medium to large, ovate, compressed; shell quite thin; quality very good. Massachusetts.

Rice.—Medium to large, ovate; shell thin. Locally highly prized. Ohio.

Woodbourne.—Large, smooth, ovate; quality best. Shell quite thick. Pennsylvania.

In most cases the descriptions given above are from the valuable report of Mr. S. B. Hodges, of the Division of Pomology, on native and introduced nuts. But the varieties selected are actually offered at this time by some of the nurseries of the States mentioned in connection with each variety. Up to the present the largest and most perfect nuts in all respects have originated west of the Mississippi, in Missouri and Arkansas, but as yet they have not been propagated so far as is known.

THE PECAN.

Several selected varieties of the Pecan have become commercial, and others of special value will soon be planted extensively. As stated in Section 289 a single firm in New York has prepared and marketed for confectionery uses 100,000 pounds in a single season. In a relatively fresh condition it is without doubt the most healthful nut known to commerce. At San Antonio, Texas, invalids with weak stomachs eat the freshly gathered nuts in such quantity as to surprise new-comers, without discomfort and with rapid increase in weight of body. The propagation of the best varieties is outlined in Section 290. The most decided present drawback to commercial culture of the Southern varieties is that the trees are slow in coming into bearing, as it is a tree of immense size. The writer measured many trees the past winter in Texas, and other parts of the South, that were seven feet in diameter of stem three feet above the ground, with immense spread of top, which bore many bushels of nuts in a season. At their north limit of growth the mature trees are relatively small in size, and they come into bearing as soon as the shellbark hickory nut. By crossing these with the very large thin-shelled varieties of Texas it may be possible to secure as valuable nuts growing on smaller hardier trees. In Iowa the pecan is found on the Mississippi River bottom land up to near the forty-second parallel. Trees grown from nuts of these Northern varieties have made thrifty growth on dry upland considerably north of the forty-second parallel, and these are the varieties that should be used for crossing with the pollen of such varieties as the San Saba of Texas.

SELECT VARIETIES OF PECAN.

Biloxi.—Size medium, pointed at each end; color light brown; shell very thin; quality very good; a good keeper.

Centennial.—Large, oblong; kernel full and plump, rich, oily, very good. Louisiana.

Columbian.—Very large, oblong; compressed at the middle, pointed; quality good. Double-starred in three of the great horticultural districts of the South. Louisiana.

Frotscher (*Frotscher Egg Shell*).—Large, oblong; shell very thin; nearly best in quality. Growing in popularity with propagators and planters. Louisiana.

Gonzales.—Medium to large, with firm thin shell, and plump easily extracted kernels; quality best. Texas.



Frotscher.



McCallister.

Jewett.—Very large, oval, with compressed center; shell quite thick; very good. Mississippi.

McCallister.—Very large, with broad base, angular, with flavor like a shellbark hickory nut. Supposed to be a hybrid. Indiana.

Paper Shell.—Large, oblong, smooth; kernel large, plump, and easily extracted. Grown in Ohio.

Pearl.—Medium to large, with thin shell and easily extracted kernels; rich and sweet. Texas.

Ribera.—Medium to large, oblong ovate; shell thin; kernel large, plump, and best in quality.

Russell.—Large, oblong; shell thin; commercially grown in three fruit districts of the South. Mississippi.

San Saba.—Medium, oval. A sweet rich variety coming into favor with planters. Texas.

Van Deman.—Large to very large, oblong; quality very good to best. A popular variety with nut-orchard planters. Mississippi.

In addition to the above in New Jersey the Guadalupe from Texas is propagated, and is said to bear earlier than most varieties, and in the South fully a dozen other nurseries are propagating select local varieties.

THE WALNUT.

Sections 283, 284, and 285 of Part I give some facts in regard to the distribution and culture of the European walnut (*Juglans regia*) in the United States; the need of alternating varieties and species in orchard, and its propagation and possible increase of hardiness by importing varieties from North Central Asia.

The varieties now cultivated on the Atlantic and Pacific coasts include some of those from Western Europe and their American seedlings, together with varieties from Japan. The latter De Candolle includes as varieties or types of *Juglans regia*. But recently botanists have included the varieties from the mountains of North Japan in a new species (*Juglans sieboldiana*), and those from the island of Yezo in extreme North Japan have been included in another species (*Juglans cordiformis*). At this time however, the *J. cordiformis* is regarded by most botanists as a variety of *J. sieboldiana*, and the writer knows from actual inspection that the walnuts of Central Asia do not differ materially from those of Japan in tree or nut very materially. Even the growing of the nuts in large clusters peculiar to *J. sieboldiana* repeated in the Asiatic varieties, and is also repeated in the cluster and other varieties of *J. regia*; the early bearing habit of the *J. cordiformis* is also repeated in the dwarf varieties of North Central Asia; yet as a matter of convenience it may be best to include the Japanese varieties as a distinct species.

LEADING VARIETIES OF WALNUT.

Cordiformis.—Without much doubt this Japan variety is a climatic variation of *Sieboldiana*. The trees bear very young, and prove hardy in Ohio and along the coast as far as tested. The kernel is

large, of best quality, and can be extracted whole with a little care. This variety by selection is likely to prove very valuable.

Drew.—Medium to large, oblate, surface quite smooth, yellowish; shell thin; kernel thick, plump, and easily extracted; meat yellowish; quality very good. Delaware.

Dwarf Prolific (*Præparturiens*).—Medium in size; shell quite hard; kernels plump and easy to extract. This old European dwarf variety will bear heavily in isolated position, often when less than six feet in height. Quite extensively planted in New Jersey and as far north as Philadelphia and New York.

Ford (*Ford Soft Shell*).—This variety has been propagated from seed giving rise to variations; but where propagated by budding or



Franquette.

grafting it has very thin shell and in all respects is a superior variety. California.

Franquette.—Form long, ovate; quality remarkably good. A French variety that is commercial on both continents. France.

Hightstown.—Medium, long, ovate; shell fairly thin; kernel plump and good. A variety grown and propagated at Hightstown, New Jersey, that proves hardy and fruitful when planted together, but, as with the chestnut, isolated trees rarely bear nuts.

Japan (*Sieboldiana*).—Ovate in form, with sharpened point, and smooth shell, which is thicker than English species; kernel plump and full, with flavor of our Butternut, but less oily and pungent. The nuts grow in clusters at the end of preceding year's growth. A rapid

grower and early bearer. Hardy in Michigan and as far north as Boston.



Japan.



Mayette.

Mayette.—Broad, and above medium in size; kernels plump and full. This variety blossoms later than usual with the species; hence has become a favorite on the Atlantic as well as the Pacific coast.

Mission (*Los Angeles*).—Medium in size, with quite a hard shell. Interesting as being the original variety found around the mission grounds of the west coast.

Serotina.—Medium in size; shell fairly thin; kernel high-flavored. Blossoms very late, hence is valuable in frosty positions.

Santa Barbara.—Medium to large; shell thin; kernel white and fine in quality. This blossoms quite late and is a smaller tree than most others and bears young. It has proven a valuable variety on the Atlantic coast when planted near other varieties.

Volga.—Medium, long, ovate; shell quite thin; quality good. Grown by the writer from nuts picked up at Saratov, on the Volga, in Russia. It has proven hardy enough to pass through winters in Central Iowa. Now propagated in Missouri.

THE NATIVE BLACK WALNUT.

Section 286 gives notes on the value of the American Black Walnut as a timber tree and its present and prospective value as a nut tree, and Section 287 gives the methods of propagation and planting.

It cannot be said that the growing of our native varieties is yet commercial, yet advances are made in the way of indicating and naming select varieties which amateurs are planting.

The Division of Pomology of the Department of Agriculture gives the following list; but in almost every neighborhood where the Black Walnut grows some good varieties may be found (286).

SOME SELECT NATIVE VARIETIES.

Gordon.—Large, cubical, somewhat conical at each end; shell medium in thickness; kernel light-colored, plump; quality very good. The original tree has now a stem three feet in diameter. Virginia.

Mirza.—Large, compressed; shell thin; kernel large; quality good. Original tree now forty inches in diameter. Ohio.

Missouri.—Size medium; form oval; kernel large and plump, and about as good as English walnut in purity of flavor. Missouri.

Peanut.—Small to medium; pyriform; shell thin; kernel entire at the large end of the nut; quality very good. Ohio.



Peanut.



Taylor.

Taylor.—Quite large, quadrangular, pointed; shell thin; kernel large, and coming out in halves; meat white; quality very good. Ohio.

Thomas.—Large, oblate, somewhat pointed at base, and still more at apex; shell quite thin; flavor sweet, rich, very good. Pennsylvania.

THE BUTTERNUT.

In Section 288 some notes are given relative to the value of timber and the value of select varieties of the nuts. As with the Black Walnut it is variable in size and thinness of shell of the nuts, and, in some cases, the select varieties have been locally propagated and

planted in a small way. Of the flavor and quality of the best varieties Mr. S. B. Heiges, of the Division of Pomology at Washington, says: "In flavor and quality of kernel the butternut is second only to the shellbark hickory and pecan among our native nuts, and is worthy of more attention than it has yet received." This is high praise, as Charles Downing, whose verdict on quality few will dispute, says of the shellbark hickory nut: "We confess, to our taste this nut is much superior to the European walnut."

As yet we have no selected commercial varieties.

SOME LEADING SUBTROPICAL FRUITS.

THE BANANA.

The Banana (*Musa sapientum*) is tropical and its cultivation on a commercial scale is carried on extensively in the West Indies, Central America, and Mexico. But in a small way, as combined ornamental and fruit-bearing plants, it is grown in South Florida, in Texas as far north as San Antonio, and in South Arizona and California. Amateurs who wish to grow fruit at San Antonio and at other points cut off the large leaves, wrap the stems with gunny-sacks, and mulch the crowns with raked-up leaves. Treated in this way new foliage usually starts in the spring early enough for developing flower-buds and fruit. But it often happens in milder winters that the foliage is held in South Florida, extreme Southern Louisiana, Southwest Texas, and South Arizona and California.

VARIETIES OF THE BANANA.

Chamba (*Hart's Choice*).—Quite large, six inches long, straw yellow in color; skin soft and thin. Flesh delicate in flavor, very good. A leading variety in Florida, Louisiana, Southwest Texas, South Arizona, and California.

Chinese Dwarf (*Musa Cavendishii*).—Small, four to five inches long, by one and one-half inches in diameter; yellow, slightly curved. Flesh delicate and fragrant. This is a low grower and stands more cold than most other species. A leading species from Lower Florida to South California.

Japanese (*Musa Japonica*).—Bunch compact; thirty to sixty fruits, oblong pointed, narrowed at base; quality fair if ripened indoors after picking. The hardiest species with edible fruit.

Orinoco.—This is a variety of the common banana (*Musa sapientum*). It is one of the hardiest and is much grown from Florida

west to South California for combined ornament and fruit production. The bunches and fruits are medium size and fairly good in quality if ripened on the plant.

THE DATE.

The Date Palm (*Phœnix dactylifera*) is an ancient fruit of the desert. Sections 208, 209, and 210 of Part I give something of its history, habits of growth, propagation, after-care, and possible improvement by crossing. In its native climes in Arabia, Northern Africa, and other dry desert regions of the old world, it has run into many-named varieties which are kept pure by propagation from suckers from the crown (209). Mr. W. G. Palgrave, who has given much attention to date varieties in the Far East, says: "The fruit varies as much in size, color, and quality under cultivation as does the apple in temperate regions." The Date Palm has long been grown in Florida, California, and other semi-tropical parts of the Union as an ornamental tree. As in such localities it failed to perfect fruit, no attempt has been made until recently to secure the best commercial varieties of the Far East. The remarkable success of the old Mission trees in Southern Arizona and Sonora, Mexico, in the way of bearing very heavy crops of good fruit, led the Department of Agriculture to import named varieties from the Far East. The first fruiting of these at Phoenix, Arizona, determined the fact that they were not true to name, and fully half of them were staminate varieties. But later importations have been made with more care, and it is hoped that in the near future the best seedling varieties of the old Missions and of those imported will be commercially planted in Southern Arizona and in the sunken desert of California. The seeds of the commercial dates from Algeria, Syria, and Egypt germinate readily. Often they sprout and grow on the unpaved streets of prairie villages and small cities where the seeds are dropped. The pistillate varieties from these seeds usually bear very good fruit, but it is variable, and the proportion of staminate trees is much too great, as one staminate to twenty pistillates is the usual proportion in Arizona. At the present time, as Prof. J. W. Toumey says: "The Date industry of the United States is in its infancy. Approved varieties have not as yet been introduced, and the quantity of fruit produced has not reached sufficient magnitude to give it a commercial rating." Hence at this time no description of varieties is advisable. The only important fact

established is that in the strictly desert regions of Southern Arizona and Southeast California the old seedling dates are as thrifty and as heavy bearers of fruit as in any part of Algeria where date-growing is commercial.

THE FIG.

Sections 205, 206, and 207 of Part I give something of the history, races, caprification, possible improvement, growing at the North, and propagation.

In mild climates, such as California and South Florida, it makes a large tree, giving a grateful shade for fruit-packing, croquet grounds, rustic seats, and even the supper-table. Trees sixty feet in height, shading a circle seventy feet in diameter, are quite common. Yet in Southwest Texas, Arizona, and Florida, recently planted trees only four feet in height of some varieties are seen bearing fruit. The nomenclature of the fig has been sadly confused; but, thanks to the labors of Dr. Eisen and others, the commercial varieties propagated from cuttings are now quite well established.

LEADING VARIETIES.

Adriatic, White.—Size medium, roundish, with medium neck; stalk short; ribs not well defined; skin thin, light green, with yellow cheek. Flesh colored with violet streaks. Considerably grown in California, Arizona, and the South. Not identical with the variety grown under this name in Europe.

Angelique (*Jaune Hative*).—Size below medium, roundish turbinate, and flattened like an onion; color yellow, dotted with long greenish-white specks. Flesh white, with tinge of rose toward the centre. Grown South and in Arizona.

Black Bourjassotte (*Precoce Noire*).—Medium, roundish oblate, with short neck and obscure ribs; color black, covered with thick blue bloom. Flesh deep red, stiff, and syrupy; quality very good for the table or drying. Grown in the Gulf States on rich moist soil and in California.

Black Genoa (*Nigra*).—Large, oblong, broad toward the apex, and slender toward the stalk; color dark purple, almost black, and covered with a thick blue bloom. Flesh yellowish, but red at center, juicy, with rich and sweet flavor. Grown South and well across the continent.

Black Ischia (*Blue Ischia*).—Medium, turbinate, flat at top; color deep purple, almost black when ripe. Flesh deep red, sweet, and luscious. Grown South and in Arizona.

Blue Celeste (*Violette*).—Small to medium, ovate, turbinate; color dark violet amber, with bloom at the neck. Flesh amber-colored, sweet, not high-flavored. A very hardy variety in Texas and the South.



Adriatic Fig.

Brunswick (*Madonna*).—Large to very large, pyriform, with swollen sides, one larger than the other; apex obtuse; neck and stock short; color pale amber, with violet shade. Flesh amber-colored. Season, early. Quality good for canning or preserves; rather poor for dessert use. Grown in Texas and the South.

Drap d'Or.—Large, pyriform, with low neck and short stem; color light reddish amber. Flesh rosy red; quality very good. Grown in Arizona and on west coast; used largely in confections and for crystallizing.

Du Roi.—Medium or above, roundish-pyriform; color pale bluish

green, with scales prominent. Flesh amber-colored, with rosy streaks; seeds very small. Specially used for drying in a commercial way in California and Arizona.

Gentile.—Very large, pyriform; neck short; color greenish yellow, with white spots. Flesh amber-colored, streaked with rose-color. Season, very early in warm climates.

Green Ischia.—Small, greenish yellow. Flesh deep red, juicy, rich, very good. A productive variety. Grown in the South quite generally.

Magdalen.—Small to medium, round; color greenish yellow; stalk long, often longer than the fruit. Flesh amber-white; quality best. Grown South and in Arizona and California.

Magnolia.—Size medium; color yellowish white; quality very good for any use. Grown on the border-land of fig culture in Central Texas and the South, and if frozen down it bears on young shoots of one season's growth that shoot up from the crown.

Mission (*California Black*).—Large, dark purple, hardy, very productive. Much used for drying. Aside from the dark color the dried product is regarded by experts equal in quality to the imported Smyrna. Grown in the South and on the west coast.

Monaco Bianco.—Above medium size, round, flattened, slightly necked, with obscure ribs; color green, and yellowish green when fully ripe, with thin bloom. Flesh dark red, juicy, brisk, but not specially rich. Is richest in dry climates such as Arizona.

Royal.—Medium, with thin skin; color reddish brown or purple. Flesh very juicy, melting, high-flavored. A favorite in Texas, Arizona, and New Mexico.

San Pedro.—Very large, roundish, or flattened; color greenish or bright yellow. Flesh very tender, amber-colored, often tinted with red. Excellent for dessert use and canning. Casts its fruit in moist climates.

Smyrna.—As grown in Texas and Arizona this is a large pale purple variety that is very prolific and fine in quality. As this bears without caprification it is probably not the true Smyrna now on trial in California (205).

Turkey, Brown.—Large, pear-shaped, with thick stem; color reddish brown or purple, with blue bloom. Flesh red, and very luscious. Tree hardy. Grown South, and is a special favorite in Texas and Arizona.

White Bourjassotte.—Somewhat larger than the black variety, round, slightly flattened, with longitudinal ribs on the sides; color waxy green, with yellow shade at maturity, covered with thin gray bloom; stalk very short. Flesh blood red; quality very good. Grown in the Gulf States and on the west coast.

White Genoa.—Medium or above, pyriform, with small neck and short stalk; color olive green. Flesh pale rose-colored; quality very good. Does well in a dry climate like Arizona.

White Marseilles.—Size above medium; roundish, with a short neck, and ridges running from stalk to apex; color green, and pale green when ripe. Flesh opal-colored, very rich, juicy, and sugary; much used for drying. Grown South and West to Texas, Arizona, and California.

THE GUAVA.

Section 220 gives an outline of the uses and commercial status of what is known as the apple of tropical and subtropical climates as a dessert fruit, and the production of guava jelly, butter, and marmalade, together with methods of propagation. As yet practically nothing has been done in connection with improving the native species as found in the West Indies, South America, and China.

VARIETIES AND SPECIES OF GUAVA.

Apple.—About the size of White Winter, roundish, apple-shaped; color red; pulp darkish in color; flavor not as rich as the White variety, but is much used for guava jelly and cheese. Grown in Florida largely. A variety of the West Indian species *P. guajava*.

Cattley (Strawberry).—An inch to an inch and a half in diameter, roundish, claret-colored, with pitted skin; pulp soft, fleshy, reddish next the skin, and paler inside; flavor agreeable and has been likened to that of the strawberry. This belongs to the South American species, *Psidium cattleianum*. Grown in Florida, Arizona, and California.

White Winter.—Size of a hen's egg, pear-shaped; skin thin, bright yellow, filled with soft pulp yellowish in color, having a pleasant subacid and aromatic flavor. Grown quite extensively in lower Florida. A variety of *Psidium guajava*.

Yellow Strawberry.—Somewhat larger than the Strawberry variety,

round; color yellow. Much grown in lower Florida and to a less extent in South Arizona and California.

CUSTARD APPLE.

In tropical and semi-tropical climates this name is applied to several species of the *Anona* of the natural order *Anonaceæ*.

The large, and in some cases very large, fruits are extensively used in the tropics, and are seen in the markets of Southern cities and rarely at the North. No attempt has been made as yet to improve the fruit by culture or crossing, but some of the selected varieties are under cultivation in Florida, Texas, Arizona, and California.

VARIETIES AND SPECIES.

Bullock's Heart (*Anona reticulata*).—Large to very large, three to four inches in diameter, heart-shaped; color dark brown, with depressions of skin giving a quilted expression; pulp yellow on the outside and white in the center; sweet, excellent; much prized in Southern Florida.

Peruvian (*Jamaica, Cherimoyer*).—Very large, three to four inches in diameter; often heart-shaped; color brown or nearly black. Flesh soft, sweet, pleasantly flavored. As Prof. Wickson says: "If it has a fault it is too rich." Grown as far north as Santa Barbara in California, and in South Arizona and Florida.

Pond Apple (*Anona glabra*).—A small, nearly evergreen tree. Fruit size of a Bellflower apple; heart-shaped, conical; color brownish yellow; pulp cream-colored, fragrant; fair in quality. Native to swamps in Southern Florida, but does well under culture.

Soursop (*Anona muricata*).—Very large, long, often eight inches in length and weighing five pounds; color dark green, with rough skin and soft prickles; color greenish; pulp with agreeable sour taste and an aroma that many do not like. Only grown in South Florida, on the Keys, and in extreme South California.

Sweetsop (*Anona squamosa*).—This is the Sugar apple of the West Indies. Fruit large, three to four inches in diameter, egg-shaped; color yellowish green with protuberances and depressions of skin; rind rather thick. Flesh creamy yellow and custard-like, sweet, and, to those accustomed to its use, delicious. Quite extensively cultivated in lower Florida, in extreme Southwest Texas near Brownsville, and in South California.

LOQUAT.

(*Eriobotrya Japonica*, Lindl.; *Photinia Japonica*, Gray.)

In the South this is usually called Japan plum. It is a small evergreen tree (214) and its fruit is regarded a fair substitute for the Cherry from North Florida westward to Texas, and South California. In this country it has been mainly propagated from the seeds, and it varies but little in size or quality of fruit from the Atlantic to the Pacific. So far as known to the writer the only variety propagated South on Angers Quince stocks is the Giant, imported from Japan within recent years. This is larger in size and is not as seedy as the average seedlings. The only American attempt to improve this fruit known to the writer was made by Mr. C. P. Taft of Orange, California. His work has shown it susceptible of speedy improvement in size, flavor, color, and bearing habits of the tree, as well as securing early and late varieties.



Loquat.

Of the valuable varieties developed by Mr. Taft, Prof. Wickson says that the one named Advance is most valuable. Of these he gives the following descriptions.

BEST VARIETIES OF LOQUAT.

Advance.—Very large, often three inches long and from one to one and one-quarter inches in diameter, peculiarly pear-shaped; color

bright orange-yellow when fully ripe; flavor distinct and very sweet; many compare its flavor with that of the Cherry. If not bruised when handled, it will keep easily two weeks, growing sweeter, and will eventually shrivel up without decay. The clusters frequently contain twenty specimens.

Premier.—Large, from two to three inches in length, pear-shaped; very sweet when fully ripe; clusters very large.

Victor.—The largest of Mr. Taft's varieties; color pink to red, and regarded best for canning, but not as good for dessert use.

OLIVE (*Olea Europea*).

Sections 202, 203, and 204 give notes on the history, soil, and air requisites for culture, propagation, and commercial olive products. The culture of the fruit has been on a commercial scale in California several years and its culture in South Arizona and portions of New Mexico and Mexico is rapidly on the increase.

LEADING VARIETIES OF THE OLIVE.

Columbella.—Medium, broadly oval; color pale yellow, changing to dark purple when fully ripe; pit small. Flesh only slightly bitter, with rich flavor. Season, late. Grown in dry localities in Arizona and California.

Lucques.—Medium, curved; color shiny black; much used for pickling under the brand of "Crescent Olive." Does well near the coast and in Arizona.

Macrocarpa.—Large, oval or obovate; color purple or nearly black. A leading pickling variety of Arizona and parts of California with dry interior climate.

Manzanillo.—Quite large, rounded oval; color purplish black. A leading pickling and oil variety of Arizona, parts of New Mexico, and California.

Mission.—Small to medium, oval, oblique. Season, late. The common variety of the Missions of New Mexico, Arizona, and California; somewhat varied by seedling production.

Nevadillo Blanco.—Small to medium, oval, oblique. Much grown in Arizona, and to a less extent in dry hot interior valleys in California.

Oblonga.—Quite large, oblique oval, but narrow at stem and broad at apex, usually pointed at both ends. Season, three weeks

earlier than the common Mission. A French variety succeeding well in Arizona, and in dry interior valleys of west coast.

Palazzuolo.—Large, with relatively small pit. A test shows over 29 per cent. of oil. This variety is only productive under irrigation in dry interior climates.

Pendulier.—Large, curved at apex end. A variety mainly grown for pickling. Does best in the interior valleys.



Mission.

Pendulina.—Quite large, oval. A French variety doing well in Arizona and in hot interior valleys on mesa ridges of California.

Polymorpha.—Very large, ovate, oblique, pointed. Season, very early. Grown on long stems in clusters of two and three; mainly used for pickling.

Rubra.—Small, oval, oblique; color black. Does well in Arizona and on the west coast, and gives a larger per cent. of oil than Mission.

Sevillano.—Very large, obovate, oblique; color purple. A very large Spanish variety used exclusively for pickling. Succeeds best in dry interior climates and does well in South Arizona.

Uvaria.—Small to medium, oval; color dark purple. Season, very late. The fruit grows in clusters, and in shape resembles grapes; hence it is very prolific. It has a very high percentage of oil.

THE ORANGE FAMILY.

The orange family includes the cultivated oranges, lemon, lime, shaddock, citron, pomelo, and kumquat. Chapter XV of Part I gives something of the history, propagation, culture, pruning, curing, and uses of these fruits.

LEADING VARIETIES OF THE ORANGE.

Amory Blood (*Amory's Malta Oval*).—Medium to large, roundish; color yellow. Flesh with red veining, melting; quality good. Season, quite early. A fine tree of robust habit in Florida that has proven a good cropper.

Australian Navel.—A coarser type of the Navel, but about equal in quality of pulp. It can be distinguished in shipments by the coarser markings of the skin and all the external parts. The tree appears to be hardier than the species in North California and Arizona.

Bessie.—Large, oval; color orange with red shadings. Flesh melting, rather rich; quality very good. A variety originating in Florida now being planted quite extensively.

Boone.—Large, roundish; color light orange; quality good. Season, very early. Originated in Florida and has been considerably planted on account of its early ripening.

Brazilian.—Medium in size, round, yellow; quality very good. Tree vigorous and productive in Florida, and prized as a late variety that will hang on the tree without deterioration until summer.

Buttercourt.—Medium in size, round; color yellow; quality best. Originated in Florida and prized on account of its high quality.

Enterprise (*Enterprise Seedless*).—Medium, round, yellow; quality good. Season, early. A nearly seedless variety originating in Florida, now double-starred by the American Pomological Society.

Foster.—Medium, round, yellow; quality good. Season, early. Another Florida seedling now commercial on a line south of Tampa.

Homosasca.—Medium, round, yellow; quality very good, combining the sweetness of the Chinese strain with the juiciness and sprightliness of the Portuguese type. Commercial.

Imperial Blood.—Medium, round; color yellow, with red shading. Flesh shaded with red; type good. A seedling originating in Florida of the Maltese Blood. Commercial.

Jaffa.—Almost identical with Majorka, but is sweeter and regarded in most localities a more regular bearer. Double-starred in Florida and parts of Arizona. Malta.

Jaffa Blood.—Small to medium, oval; color orange, with patches of bright red. Flesh colored like Malta Blood; quality best. Quite as profitable as Jaffa, though smaller in size.

Joppa.—Medium, very heavy, oblong in form; color yellow with red cheek. Flesh firm, juicy, with peculiar flavor that many like, while others regard it only fair in quality. Grown in California from seed obtained from Palestine.

Kumquat.—Small, three-quarters to one and one-quarter inches in diameter, with sweet, thick rind and acid pulp. A large shrub, much hardier than the orange, that loads with the small fruit. Two varieties are cultivated differing only in shape, one being round, the other oval. They are widely grown across the continent on the south limit. The fruit is preserved, and also used for dessert, the rind as well as pulp being eaten. The bushes are often potted for ornamental use in living-rooms.

Madam Vinous.—Medium, round, yellow; quality best. Originated in Florida, where it is double-starred by the American Pomological Society.

Majorka.—Medium, nearly round; color orange-yellow. Flesh fine-grained, tender, vinous, very good. Popular market variety in Florida and also in extreme Southwest Texas and in Arizona. Malta.

Maltese Blood.—Small to medium, oval; color yellow, with patches of rosy red. Flesh tender with delicious flavor, streaked and mottled with red; seeds few. A dessert variety grown in Florida, Arizona, and California. The tree rarely shows thorns.

Maltese Egg.—Small, oval; color orange and red; quality best. A fair grower and heavy bearer in South Florida, Arizona, and California.

Maltese Oval (*Gary's Mediterranean*).—Medium, oblong, flattened at



Maltese Blood



Mediterranean Sweet.

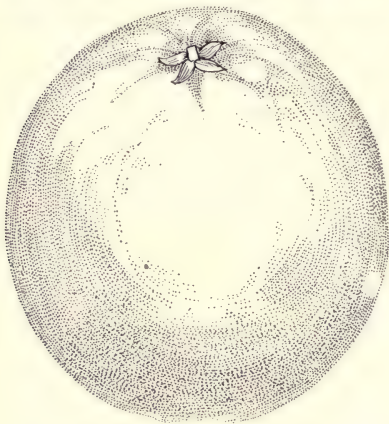
the stem; quality very good; a late keeper. Much prized as a shipper in Florida, but it needs good culture and soil fertilization.

Mediterranean Sweet.—Medium to large; color yellow. Flesh solid, but of fine texture with few seeds. Season, very late on west coast, where it was the leading variety prior to the advent of the Bahia or Navel. Popular in Arizona, where it ripens much earlier. It also ripens much earlier in Florida.

May's Best.—Medium, round, yellow; quality good; season quite early. A commercial variety south of Tampa in Florida.

Old Vini.—Large, round, yellow; quality very good. Season, quite early. A Florida seedling now commercial south of Tampa in Florida.

Paper Rind St. Michael.—Small, round. Flesh very firm, juicy, very good; skin very thin. Season, late in California, but earlier in



Paper Rind.

Arizona and Florida. Tree of dwarf habit; an excellent bearer, and extensively grown to follow the Naval.

Parson Brown.—Medium round, yellow; quality good. A Florida seedling, much grown on account mainly of its early ripening.

Pineapple.—Large, round; color yellow, with violet shading.

Season, medium to late; quality very good. Much grown in South Florida.

Ruby.—Medium, roundish; color yellow, with areas of red. Flesh usually reddened, juicy, and sprightly; quite acid until fully ripe. A good bearer, and finds ready sale on account of its colored flesh. Grown across the continent in the orange belts.

Satsuma (*Unshiu*).—Medium-sized, flattened. Flesh fine-grained, sweet, nearly seedless. In California now top-worked on sweet orange,



Valencia Late.

where it ripens earlier. In Florida it is hardier than most varieties, and is worked mainly on *Citrus trifoliata*; commercial as a fancy thin skinned variety ripening very early in Florida, often the first of October.

Seville, Sweet.—Small, round; color yellow; quality fairly good. Season, very early, and sweet even before it fully colors; used in Florida for early shipments when all other varieties are too sour.

Tangerine (*Kid Glove*).—Small, flat; color yellow, shaded with red. Flesh juicy, aromatic; quality best. A fancy fruit running into many varieties. The one described above is commercial under the above name.

Thompson Improved—An improved variety of the Navel, with thinner and silkier rind and more melting pulp than the first introduced type. This is now sought by planters in California and Arizona.

Valencia Late (*Hart's Tardiff*).—Medium, oblong, or long oval; color pale yellow. Flesh deep yellow, sprightly and crisp; very good. Season, late. Tree a strong grower with some thorns. Double-starred in Florida and California as the best late shipper.

Whittaker.—Medium, round, yellow; quality very good. A variety of the sweet China oranges originated in Florida that has become commercial.

Washington Navel (*Bahia*).—Large, solid, heavy, roundish oval; color yellow. Flesh melting; quality nearly best, and is practically seedless, as a seed is not often found. Tree is healthy and an excellent early bearer on the west coast, and it also bears well in the hotter and drier air of Arizona and to less extent in Florida. But the highest quality is developed in the interior valleys of California, or rather on the slopes leading down to the valleys. Brazil.

LEMONS.

Prior to the winter of 1894-5 lemons were grown commercially in Central Florida. Since that period the plantings have been quite extensive in lower Florida. In California since the advent of the Mediterranean varieties with acceptable size, thinness of skin, freedom from bitterness, and the systems of curing have been perfected, the advance in lemon-growing has been remarkably rapid. See Sections 196 and 197 of Part I.

LEADING VARIETIES OF THE LEMON.

Belair.—Size of Eureka, oblong oval; color light yellow; quality best for curing. A favorite variety in South Florida and Arizona.

Bonnie Brae.—Medium-sized, oval; rind very thin, smooth; pulp pleasantly acid. A California seedling grown in Southern San Diego County, but as yet local.

Eureka.—Medium; rind sweet; seeds very few; one of the three best for commercial use, but only grown near the coast in California. The foliage is too thin for hot interior valleys. Does well in South Florida.

Genoa.—Medium, oval; rind sweet; nearly seedless; one of the three leading varieties of South California and South Arizona.

Imperial Messina.—A variety grown in South Florida that has all the requisites of a commercial modern lemon. As yet local.

Lisbon.—Size very uniform, rather oblong; rind thin and sweet. Flesh fine-grained, strongly acid, with few seeds; one of the best keepers. Tree a strong grower and great bearer. Popular at interior points in California and in the nearly frostless parts of Arizona.

Sicily.—This seems an uncertain name for a class almost identical in quality of fruit for curing. The variety popular in South Florida is oval, light yellow, and like Belair in size, quality, and thinness of rind. This is also grown in South Arizona and California.

Villafranca.—Medium, quite uniform, oblong, slightly pointed at apex; rind thin without bitterness, very acid; nearly seedless. A leading commercial variety in South California, Arizona, and South Florida.

THE LIME.

The Lime (*Citrus medica acida*) is most frequently grown from seed, hence the varieties are numerous and variable. This is specially true of the Cuban or West Indian type, which is also grown in lower Florida and on some of the Keys. In addition there are a few varieties propagated by budding or grafting. Budding on *Citrus trifoliata* has resulted in increasing the hardness of these varieties. In nearly frostless sections, such as parts of Mexico and the West Indies, it is planted in hedge form. As it is very thorny and impenetrable, these hedges answer the double purpose of a defensive hedge and bearing heavy crops of fruit. The skin is thin and the juice pure-flavored and very acid; it is preferred in tropical regions to the lemon for about all uses. But it does not keep like the lemon, hence is not commercial to the same extent. The fruit is largely used in the manufacture of citric acid in lower Florida, the West Indies, and in British India. The fruits are shipped from lower Florida and the West Indies in immense quantity to the Atlantic coast cities during summer and autumn, but they are rarely seen in the interior cities.

VARIETIES OF THE LIME.

French (*False Lemon*).—As large as a medium-sized orange, with thick skin that is warty and uneven, with swelling at apex. Flesh pleasantly acid, and the segments divide as readily as the Tangerine oranges. A very vigorous variety used for stocks for the orange. The Washington Navel in Florida bears far more freely on this stock than any other.

Imperial.—Larger than Navel orange; oval, yellow; quality good. Grown mainly in lower California, but it does well in lower Florida.

Persian.—Of lemon size, oval, with point at apex; color light yellow; quality good. Extensively grown in lower Florida.

Rangpur (*Mandarin Lime*).—Oblate; much like a Mandarin orange; color orange and red; quality best. This is most extensively used in lower Florida for summer drinks and even for dessert use. In the coast cities it usually sells much higher than lemons.

Tahiti.—Larger than the commercial lemon; oval; light yellow; quality best. A leading commercial variety propagated mainly by budding.

Turanj.—Very large, often as large as the Pomelo; oblong; yellow; quality rather coarse and low. Only grown for kitchen use.

West Indian.—Small, oval; skin thin, smooth; juice abundant, highly aromatic, rich, acid, and pleasant, but somewhat variable as grown from seed. Select varieties are propagated by budding in lower Florida.

THE CITRON.

The Citron (*Citrus Medica genuina*) is a large thick-rinded fruit, of which only the rind is used in the making of preserves and confections. It is a shrub or small tree. Without care in pruning it becomes a spreading bush, as the very large fruit bends the points of growth to the ground, where they take root like the canes of the black raspberry. It is grown in parts of Florida, and westward to California. It is frozen down at intervals, but it quickly sprouts from the crown and is again weighted with fruit. It is grown readily from ripe wood cuttings, hence it is easy to perpetuate the best varieties. As yet the imported candied citron is mainly used, but at this time it seems probable that the home product will prove of superior quality and displace the foreign product.

VARIETIES OF THE CITRON.

Corsican.—Medium in size, and said to be of excellent quality. A new variety from Corsica that gives promise of becoming commercial.

Fingered Citron.—Extremely large, with separated lobes that project like fingers. A variety much used in China on account of its rich odor. The writer has met with this in Cuba and South California. Only used as an ornamental tree and for its delightful odor.

Lemon.—Very large, oval, yellow, glossy, surface wavy. The fruits of this variety sometimes reach immense size and weigh ten pounds.

Lyman.—Much smaller than the orange, with a sweet and edible rind; also largely used for preserving.

Orange.—Much like the Lemon variety except that the skin is more waved and the color darker yellow.

THE POMELO, OR GRAPE-FRUIT.

The species to which this belongs (*Citrus decumana*) includes what are known as Shaddocks. The round-fruited varieties are known as Pomeles, Pumelos, or Grape-fruit, and the pear-shaped ones are known as Shaddocks.

The round-fruited Pomeles, or Grape-fruits are grown commercially in Florida, where a large part of the best varieties have originated. The pear-shaped varieties or Shaddocks, are grown more as ornamental trees and curiosities, and the fruits are not often found in markets. See Section 198.

VARIETIES OF POMELO.

Aurantium.—Medium, round, light yellow; quality good. Much grown in Florida and the South. Florida.

Blood.—Large to very large, roundish, slightly pyriform. Flesh reddish or flesh-colored; quality fair. One of the best of the Shaddock type.

Forbidden Fruit.—Small, growing in clusters; thin-skinned, and filled with subacid refreshing juicy pulp. This is also named Grape-fruit.

Hart.—Medium, roundish, light yellow; very good. Commercial for Northern market. Florida.

Josselyn.—Large, roundish; color light yellow; quality good. Season, rather late. Heavy bearer. Florida.

Mammoth.—Very large, roundish, somewhat pyriform; quality scarcely good. Grown in Arizona, South California, and on south coast as a curiosity and ornamental tree; of the Shaddock type.

Marsh Seedless.—Medium, round, light yellow. Flesh with few seeds; quality good. A heavy bearer. Florida.

May (*May's Pomelo*).—This has taken many premiums on account of its relatively sweet and delicious pulp with little of the bitter peculiar to the pomelo. Commercial.

Pernambuco.—Very large, roundish; color light yellow; quality very good. Season, late. Tree with short thorns. A South American variety grown quite largely in Florida for late Northern market.

Royal.—Small, round, light yellow; quality very good. Season, early; only slightly bitter; a heavy bearer. Commercial for early shipments North. Florida.

Tresca Blood.—Medium, roundish, yellow. Flesh rose-colored; quality very good. Commercial in Florida, Arizona, and South California. Bahama Islands.

Triumph.—Small, round, light yellow; quality good. Season, late. Florida.

Walter.—Medium, round, light yellow; quality good. Season, late. Florida.

THE PINEAPPLE (*Ananas sativus*).

Sections 212 and 213 of Part I gives something of the history, habits, culture, and increased use of this queen of fruits.

The varieties grown in Florida, and under glass at the North, are all foreign, and it is a significant fact that nearly all the cultivated varieties have been produced by florists in England and France by hand pollination under glass. In this way the Pine, as it is called in Europe, was grown in England during the reign of Charles II. The writer has seen in the rooms of the Royal Horticultural Society of London a picture representing the Royal gardener, Mr. Rose, presenting on bended knee the first pineapple grown in England. The growing for private use under glass became so general that the production of new and improved varieties attracted little attention.

It would now be difficult to trace the history of those under cultivation in Florida and the West India islands. In many cases the varieties sent out from Europe, originating under glass, have had their original names changed in the West Indies and other tropical climes. In open field culture in the tropics it appears that very few, if any, of the best modern varieties have been originated. As well known instances the Enville was grown from crossed seed by the gardener of the Earl of Stamford; Bucks Glove Pine was raised from crossed seed at Elford, England; the Dounton Havanna was grown from crossed seed by Thomas A. Knight of England. As a rule our cultivated pineapples rarely produce perfect seed without cross-pollination. As Burbidge says: "This sterility having been favored during the past two centuries owing to the almost invariable method of propagating from offsets or suckers." But artificial crossing of distinct types seems invariably to develop perfect seeds. The seeds are but little larger than those of millet, kidney-shaped, brown in color. They are enclosed in small ear-like cells under the recurved bracts at the top of the fruit. With modern American knowledge in regard to natural and artificial cross-pollination it is quite possible to produce seedling varieties that will combine the vigor of a given variety with the size and quality of fruit of another. This is now being done by the U. S. Department of Agriculture. In addition, something may be gained by seedling production in Florida in the way of exact adaptation to climate.

VARIETIES OF THE PINEAPPLE.

Abachi (*Abakka*).—Size medium to large, oblong; color when ripe golden yellow. Quite a tall, growing plant with narrow dark-green and purple-tinged leaves; quality very good, but not best for shipping, as it is quite tender and easy to bruise. Brazil.

Albert, Prince.—Large, conical; quality of flesh best. A leading variety under shed culture, and the ripened fruit brings the highest price in the coast cities.

Beatrice, Lady.—Large, conical; quality best. An old English variety grown in lower Florida and in Cuba.

Black Antigua.—Large, oblong, color rather dark; quality best. Grown on the lower Keys of Florida and in Cuba.

Black Prince.—Large, conical; color dark; quality best. Grown on the lower Keys of Florida and in Cuba.

Crown Prince.—Large, conical; quality very good to best. An old English variety grown to limited extent in lower Florida.

Enville.—Medium to large, oblong, with broadened tuft at top; quality very good. An old English variety long grown under glass. Considerably grown in Florida and the West India Islands.

Jamaica, Black.—Large to very large; oblong; color dark yellow. Commercial in lower Florida.

Kew (*Kew Mammoth*).—Very large, conical, yellow; quality best. A dessert variety much prized for home use in Florida.

Pernambuco.—Small to medium, oblong; color yellow; quality best. A dessert variety prized for local use. Brazil.

Porto Rico.—Large to very large, roundish; yellow when fully ripe; quality fair to good. A vigorous growing plant producing the largest fruit. A good shipping variety.

Queen (*Egyptian Queen*).—Medium, conical; color yellow. Flesh very juicy, of exquisite flavor, and a good keeper. One of the oldest seedlings developed under glass in England. Next to the Red Spanish it is the leading variety of the Keys and lower Florida.

Ripley Queen.—Medium, conical; color yellow; quality very good. Commercial in lower Florida.

Smooth Cayenne.—Large, somewhat conical; color dark orange. Flesh yellow, rich, highly flavored; a very juicy variety and a good shipper. Plant robust and nearly free from thorns.

Spanish, Red.—This at present is most extensively grown in Florida. Size medium, short, rounded, with large pips of dark color, changing to a reddish brown when fully ripe. Flesh subacid, juicy, good. One of the hardiest varieties, and an excellent one for crossing with the larger fruiting varieties.

White Antigua.—Medium, oblong; color light yellow; quality very good. Becoming commercial for shed culture in Florida.

THE POMEGRANATE.

This species (*Punica granatum*) is grown for both fruit and ornamental planting.

For ornament the double-flowering varieties are mainly planted in the South and on the west coast. The dwarf variety — *Punica nana* of Linnæus—is used as a pot plant at the North, but in the South

and in Arizona, New Mexico, South Texas, and California it is used as a hedge plant.

For character and uses of fruit see Section 216 of Part I. It is readily propagated in the South from hard-wood cuttings planted in winter. It also propagates readily by layering (48), and also by soft-wood cuttings during summer (57). As to varieties grown for fruit the present showing is by no means satisfactory in view of the now well-known fact that seedless or nearly seedless varieties with tender juicy pulp are obtainable in Central and South Asia. The writer saw and tested some of these varieties in the Far East in 1882 five inches in diameter.

VARIETIES OF POMEGRANATE.

Acid.—Large, three to four inches in diameter; yellow, with red shading; pulp sharp acid, yet desirable for hot-weather drinks with needed supply of sugar.

Dwarf.—Small, one and one-half to two inches in diameter, round; color red; pulp very acid. A form of the acid type with low bushy habit often grown in pots under glass at the North.

Caribbean Coral.—Large, oval, yellow, with crimson blush; pulp pink, aromatic. Grown South for Northern markets, as it has rather a thick yet soft and leathery skin.

Paper Shell.—Size medium, round, with very thin skin; pulp unusually refreshing, cooling, and pleasant. A favorite home variety in the South and in Cuba.

Purple.—Large, oval, yellow, with red and purple shading; quality very good. A leading variety in the South.

Spanish Ruby.—Large, oval, color crimson, with deep crimson pulp. A leading variety in Louisiana and the Gulf States.

Subacid.—Much like the Sweet, but the pulp has somewhat more acid.

Sweet.—Large, but somewhat smaller than Acid; round; color darker red than the Acid. Grown from Arizona to Florida.

SOME SUBTROPICAL FRUITS GROWN TO LESS EXTENT IN THE UNITED STATES.

Alligator Pear (*Persea gratissima*).—A handsome evergreen tree. Fruits pear-shaped, about the size of a Bartlett pear, with a single, quite large seed. When the thin skin is ripe it can be peeled from the pulp, which is quite firm and buttery, and it is eaten with orange- or lime-juice, or with pepper and salt. Nearly all persons like it at first trial, and epicures are willing to pay fancy prices for it. The fruit is picked at intervals of from ten to fourteen days for a period of two months. Grown in South Florida, Texas, Arizona, and in California as far North as San Francisco.

Granadilla (*Passiflora edulis*).—A species of Passion-vine common in California and the Gulf region, bearing fruits about the size of a pullet's egg, purple in color, with thin brittle shell enclosing a mass of seeds covered with yellow pleasantly acid pulp, from which an excellent jelly is made.

Jujube (*Zizyphus sativa*).—A small tree. The orange-red fruits, one-half to three-quarters inch long, on short stalks, are produced on plants three years old. They are used for making the jujube paste of the confectioner which is much prized in Asia, and in this country where known. Grown in Florida, Texas, Arizona, and California.

Mango (*Mangifera indica*).—A round-topped handsome evergreen tree, the fruit of which is a staple article of food in the tropics during the hottest months. Prior to the freeze of 1886 it was regarded a valuable fruit in South Florida for home use and shipping; 125,000 of the large fruits were shipped to Northern markets in 1884. The fruit is four to five inches long, kidney-shaped, with smooth skin; color pale green to yellow, with light red cheek; the flesh of the best varieties is sweet, luscious, and prized for dessert use in most markets of the world adjacent to subtropical climates. Grown in Southern Florida, near Brownsville, Texas, and in extreme South California.

Marmalade Plum (*Lucuma mammosa*).—A small, round-topped, ornamental tree. The fruit is oblong oval, fully six inches long, with but one large seed. Flesh yellowish red, soft, very sweet, with quite

good flavor; marmalade is made from its pulp, hence the name Marmalade Plum. Grown in the West Indies and to some extent in lower Florida.

Melon Shrub; Pepino (*Solanum muricatum*).—An erect bushy shrub with small narrow leaves. Fruit egg-shaped, four to six inches long; color yellow, with streaks and splashes of violet-purple. Flesh aromatic, tender, juicy, and in flavor fair to good, reminding one of the tomato and melon. As with the tomato, it needs some education of the palate to be relished for table use. Grown as an annual in Florida, Texas, Arizona, and California, and can be grown in the prairie States by starting the plants very early in pots. It bears the second year from the seed, and the fruit ripens in successive crops for several months in mild climates. Grown in Florida, and westward to South California; also grown under glass in the North.

Melon Tree (*Melon Papaw*).—This is known in tropical climates as “melon zapote” (*Carica papaya*). In mild climates it forms a tree with stem like a palm, and immense leaves near the top which are often twenty-four inches across, palmately seven-lobed. Fruit six to twelve inches long, and half as much in diameter, hanging from the axils of the large leaves. As grown in California, Prof. Wickson says: “It ripens its fruit the third year from seed—the fruit being pleasant to eat as one would a muskmelon. The large fig-like leaves and peculiar markings of the trunk make the tree a very striking object.” Grown in South Florida, near Brownsville, Texas, in South Arizona, and in South California.

Strawberry Tree (*Arbutus unedo*).—A small tree planted for ornament and for its fruits. The fruits are scarlet, warty, three-quarters of an inch in diameter, and very agreeable in flavor; as it ripens the fruits range through shades of yellow, orange, and deep red, and contrast grandly with the glossy evergreen foliage. Grown from Florida to South California, and it runs into two or three marked varieties.

Tamarind (*Tamarindus Indica*).—One of the most beautiful and useful of the tropical trees, with acacia-like foliage. It is grown without protection in Southern Florida, near the mouth of the Rio Grande in Texas, and in Southern California. Its thick fleshy pods contain an acid pulp used for cooling drinks in hot climates over the world. The pulp preserved without sugar by drying is used in

various ways and is regarded as a laxative, a cure for sore throat, and specially as a refrigerant for cooling bodily heat in hot periods.

Tree Tomato (*Cyphomandra betacea*).—A tree-shaped, half-woody plant, with large, soft, pubescent leaves. Fruit about size of a duck's egg, with reddish color. It is used as a dessert fruit by those who like ripe tomatoes, and when stewed with sugar it has a slight subacid flavor which is much liked by most people. It also makes an excellent jelly.

White Sapota (*Casimiroa edulis*).—A fine evergreen tree grown in South Florida, Arizona, and California. Fruit about the size of a Navel orange, greenish yellow. Flesh or pulp soft, rather rich, and with a decided peach flavor. It has been said that in Mexico its use as a fruit favors sound sleeping, and an infusion of the leaves is used for diarrhœa.

THE STANDARD AMERICAN RULES FOR EXHIBITING AND NAMING FRUITS.

The rules of the American Pomological Society for exhibiting and naming fruits are as follows:

SECTION I.

NAMING AND DESCRIBING NEW FRUITS.

Rule 1.—The originator or introducer (in the order named) has the prior right to bestow a name upon a new or unnamed fruit.

Rule 2.—The society reserves the right, in case of long, inappropriate, or otherwise objectionable names, to shorten, modify, or wholly change the same, when they shall occur in its discussions or reports; and also to recommend such changes for general adoption.

Rule 3.—The name of a fruit should, preferably, express, as far as practicable by a single word, a characteristic of the variety, the name of the originator, or the place of its origin. Under no ordinary circumstances should more than a single word be employed.

Rule 4.—Should the question of priority arise between different names for the same variety of fruit, other circumstances being equal, the name first publicly bestowed will be given precedence.

Rule 5.—To entitle a new fruit to the award or commendation of the society, it must possess (at least for the locality for which it is recommended) some valuable or desirable quality, or combination of qualities, in a higher degree than any previously known variety of its class and season.

Rule 6.—A variety of fruit having been once exhibited, examined, and reported upon as a new fruit by a committee of the society, will not thereafter be recognized as such, so far as subsequent reports are concerned.

SECTION II.

COMPETITIVE EXHIBITS OF FRUITS.

Rule 1.—A plate of fruit must contain six specimens, no more, no less, except in the case of single varieties not included in collections.

Rule 2.—To insure examination by the proper committees, all fruits must be correctly and distinctly labeled, and placed upon the tables during the first day of exhibition.

Rule 3.—The duplication of varieties in a collection will not be permitted.

Rule 4.—In all cases of fruits intended to be examined and reported by committees, the name of the exhibitor, together with a complete list of the varieties exhibited by him, must be delivered to the secretary of the society on or before the first day of the exhibition.

Rule 5.—The exhibitor will receive from the secretary an entry card, which must be placed with the exhibit, when arranged for exhibition, for the guidance of committees.

Rule 6.—All articles placed upon the tables for exhibition must remain in charge of the society till the close of the exhibition, to be removed sooner only upon express permission of the person or persons in charge.

Rule 7.—Fruits or other articles intended for testing, or to be given away to visitors, spectators, or others, will be assigned a separate hall, room, or tent, in which they may be dispensed at the pleasure of the exhibitor, who will not, however, be permitted to sell and deliver articles therein, nor to call attention to them in a boisterous or disorderly manner.

SECTION III.

COMMITTEE ON NOMENCLATURE.

Rule 1.—It shall be the duty of the president, at the first session of the society, on the first day of an exhibition of fruits, to appoint a committee of five expert pomologists, whose duty it shall be to supervise the nomenclature of the fruits on exhibition, and in case of error to correct the same.

Rule 2.—In making the necessary corrections they shall, for the convenience of the examining and awarding committees, do the

same at as early a period as practicable, and in making such corrections they shall use cards readily distinguishable from those used as labels by exhibitors, appending a mark of doubtfulness in case of uncertainty.

SECTION IV.

EXAMINING AND AWARDED COMMITTEES.

Rule 1.—In estimating the comparative values of collections of fruits, committees are instructed to base such estimates strictly upon the varieties in such collections which shall have been correctly named by the exhibitor prior to action thereon by the committee on nomenclature.

Rule 2.—In instituting such comparison of values, committees are instructed to consider, first, the values of the varieties for the purposes to which they may be adapted; second; the color, size, and evenness of the specimens; third, their freedom from the marks of insects, and other blemishes; fourth, the apparent carefulness in handling, and the taste displayed in the arrangement of the exhibit.

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